DOCUMENT RESUME

ED 266 755 HE 019 139

TITLE	Development of a Design for Evaluation of the Podiatric Medicine Training Grant Program. Final Report and Executive Summary.
INSTITUTION	American Association of Colleges of Podiatric Medicine, Washington, D.C.; Mandex, Inc., Vienna, VA.
SPONS AGENCY	Health Resources Administration (DHHS/PHS), Hyattsville, Md. Div. of Medicine.
REPORT NO	HRP-0906744; HRP-0906745
PUB DATE	86
CONTRACT	DHHS-240-85-0009
NOTE	105p.
PUB TYPE	Reports - Evaluative/Feasibility (142) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	*Clinical Teaching (Health Professions); Data Collection; Evaluation Methods; *Federal Programs; *Geographic Distribution; Graduate Surveys; Higher Education; Medical School Faculty; *Medical Students; Patients; *Podiatry; *Program Evaluation; Questionnaires; Research Design

ABSTRACT

Information is presented on an evaluation design for a federal program, the Podiatric Medicine Training Grant Program. The program supports the clinical training of third- and fourth-year podiatric medical students in underserved areas. Background information is provided on: the supply and distribution of health professionals and podiatrists in particular; the nation's colleges of podiatric medicine, and podiatry training sites in three states funded by this project (Iowa, Pennsylvania, and California). For seven short-term and two long-term program objectives, information is provided on hypotheses concerning the grant program, proposed evaluation strategies, the analysis plan, available baseline data, and recommendations for future evaluation. Data were collected using mail surveys or personal interviews for several target groups: podiatry school applicants from shortage areas, patients at remote site clinics, college faculty and college/high school career advisors in areas served by remote clinics, recent graduates practicing in shortage areas, and clinical trainees and their supervisors at remote sites. Appended are the data collection instructions: survey forms for applicants, patients, faculty and career advisors, and recent graduates; and interview guides for clinical trainees and clinical supervisors. (SW)

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DEVELOPMENT OF A DESIGN FOR EVALUATION OF THE PODIATRIC MEDICINE TRAINING GRANT PROGRAM

FINAL REPORT

CONTRACT NO. 240-85-0009
December 31, 1984-January 31, 1986

CONTRACTOR

American Association of Colleges of Podiatric Medicine
(Subcontractor: Mandex, Inc.)

SPONSOR

Division of Medicine
Bureau of Health Professions
Health Resources and Services Administration
Department of Health and Human Services

HE019139

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FINAL REPORT

CONTRACT NO. 240-85-0009
December 31, 1984-January 31, 1986

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This report is made pursuant to Contract No. 240-85-0009 which was awarded at $89,111. Robert A. Capone was the Contractor's Project Director.

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DEVELOPMENT OF A DESIGN FOR EVALUATION OF THE PODIATRIC MEDICINE TRAINING GRANT PROGRAM

EXECUTIVE SUMMARY

CONTRACT NO. 240-85-0009
December 31, 1984-January 31, 1986

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PURPOSE OF THE PROJECT

Despite their growth in number over the past decade (from approximately 7,000 in 1974 to 9,000 in 1984), podiatrists remain in relatively short supply in many parts of the country. There were, in 1981, a total of 1,403 designated podiatric shortage areas (counties). Little has taken place since then to alleviate this geographic maldistribution.

The Podiatric Medicine Training Grant Program, enacted in 1981, was designed to attract students from podiatric shortage areas to the study of podiatric medicine by providing clinical training sites, as role models, in such areas and by otherwise supporting recruitment activity directed toward shortage area students. Currently in its second year of funding, the program (often called the "remote site training program") has yet to be evaluated.

The purpose of this project has been to develop a suitable design for possible future evaluation of the program and to assemble relevant baseline data for use in conducting such an evaluation.

ISSUES AND BACKGROUND INFORMATION

Of the seven colleges of podiatric medicine in the United States, two have only recently begun enrolling students. The College of Podiatric Medicine and Surgery (Des Moines, Iowa) began enrollment in 1982; the Barry University School of Podiatric Medicine (Miami Shores, Florida) began in 1985.

The remaining five colleges -- Ohio, New York, Pennsylvania, California, and Scholl (Chicago, Illinois) -- largely determine the geographic distribution of the nation's podiatrists. Well over 50% of all podiatrists practice in those five states, leaving other areas of the country with podiatrist-to-population ratios inadequate to meet the foot care needs of the public. Where the shortage of podiatrists is coupled, as it often is, with a shortage of primary care physicians, the problem of meeting public need is exacerbated.

At this stage, there is little basis for judging whether the remote site program has remedied -- or is on the road to remedying -- these imbalances. Although authorized in 1981, the program was not funded until 1984. At that

time, grants were awarded to the colleges of podiatric medicine in Iowa, Pennsylvania, and California to establish clinical training sites at the following locations:

College of Podiatric Medicine and Surgery (Iowa)	Four rural areas in Iowa.
Pennsylvania College of Podiatric Medicine	Pittsburgh and St. Louis; Baltimore added later.
California College of Podiatric Medicine	East Los Angeles (Watts).

In the case of the Iowa and Pennsylvania colleges, moderate funding was provided to permit intensified recruitment of students from shortage areas; in the case of California, additional funding for recruitment was minimal.

METHODOLOGICAL OVERVIEW

Statement of Objectives

To establish a suitable framework for developing an evaluation design, all plausible program objectives were carefully delineated and explored. While this effort focused upon the primary goal for which the program was originally intended -- alleviating the geographic maldistribution of podiatrists -- other goals were examined as well. The full set of program objectives eventually adopted fell broadly into three categories:

Category 1 - Objectives relating to the GEOGRAPHIC MALDISTRIBUTION OF PODIATRISTS:

- Recruitment of shortage area students to the study of podiatric medicine
- (Special case of the above) Clinical training site as role model
- Clinical training site as inducement to non-shortage area students, trained at those sites, to remain in shortage area practice.

Category 2 - Objectives relating to INDIGENOUS POPULATIONS:

- Provision of primary foot care to populations previously underserved
- Increased public awareness of the importance of foot care to general health and well-being
- Clinical training site as entry point to health care delivery system for persons with systemic disorders

Category 3 - Objectives relating to PODIATRIC MEDICAL EDUCATION:

- Expansion of existing training capacity of colleges of podiatric medicine
- Linkage of local practitioners, serving as clinical supervisors, to podiatric medical education network

Methods of Data Collection (Primary)

To examine, at some future time, the extent to which these objectives will have been met, a series of primary and secondary data collection mechanisms were developed. The primary methods consisted of four surveys, each of modest proportions, and two personal interview protocols. The surveys were directed toward the following audiences, for the purposes indicated:

a. Survey of applicants. - This is a form, routinely directed to all individuals applying for admission to colleges of podiatric medicine. Its function is to establish the motivational factors involved in that individual's career choice and to establish whether or not the remote site training program played a role in that choice.

b. Survey of patients. - This is a form administered to the remote site clinical patients upon intake and on the occasion of their third visit or completion of treatment, which occurs sooner. Its function is to examine the patient's prior foot care history (if any), degree of

satisfaction with both prior and present treatment, and the referral (if any) of patients with systemic disorders to other sources of care.

c. Survey of faculty and career advisors. - This is a form, directed to indigenous high school and college faculty who are in a position to influence students' career choices. Its function is to ascertain the extent (if any) to which the clinical training site has affected that individual's awareness of, and attitude toward, podiatric medicine as a professional career. Secondary questions address any perceived changes in student attitudes toward podiatric medicine since the remote site clinic was established.

d. Survey of recent graduates practicing in shortage areas. - This is a form directed to all podiatric medical graduates who, in the future, establish practice in shortage areas. Its function is to ascertain the motivational factors involved in that individual's choice of practice location and, in particular, whether the choice was affected by their involvement (or that of others they know) in the remote site training program.

These proposed surveys are to be supplemented by two sets of personal interviews. The first set of interviews, of the clinical trainees themselves, seeks to establish (a) the dynamics by which those students entered podiatric medicine (i.e., was the remote site training program involved in any way?) and (b) their intended future practice location. The second set of interviews, of the clinical faculty at each site, seeks to establish the importance to those individuals of their formal linkage with the podiatric educational network.

Methods of Data Collection (Secondary)

In addition to the six primary methods outlined above, three methods of secondary data collection and analysis were proposed.

The first method is a tabulation, each year, of the number of applications received from individuals residing in each of the following types of shortage areas:

- Shortage areas in which there was active grant-supported recruitment activity, generally involving personal contact. (Areas in which the remote site clinics are located are included in this category.)

- Shortage areas in which there was grant-supported recruitment activity of a limited, diffuse nature (e.g., posters or spot announcements).

- Shortage areas in which there was no grant-supported recruitment activity (or in which the level of recruitment was essentially the same as it had been prior to establishment of the remote site training program).

In 1984 and 1985, the percentages of applications received from students in each of these areas respectively were as follows:

	Percentage Distribution of Applications Received		Ratio
	1984	1985	(1985/1984)
Shortage areas with active grant-supported recruitment	0.72%	1.38%	1.92
Shortage areas with limited grant-supported recruitment	1.95	2.49	1.28
Shortage areas with no grant-supported recruitment	17.28	16.94	0.98
All other areas (i.e., non-shortage areas and foreign)	80.04	79.19	0.99

The progression of ratios noted in the right-hand column is consistent with the hypothesis that the remote site training program has been successful in generating interest in podiatric medicine among shortage area students. The year-to-year differences, however, are not quite statistically significant.

The second proposed method of secondary data collection is a tabulation, each year, of the number of podiatrists practicing in shortage as opposed to non-shortage areas. There is no suitable data base, however, for immediate exploration of this issue: the most obvious candidate -- the American Podiatric Medical Association's membership files -- lacks the county designations needed

for correlation against the Department of Health and Human Services' list of podiatric shortage areas. Rather than undertake a massive Zip code-to-county conversion process at this time, it was decided to defer this operation pending the anticipated modification of the APMA membership tape layout.

The third and final method of secondary data collection involves the statistical summaries submitted each year by the colleges of podiatric medicine concerning student-patient clinical encounters. It is proposed that this information, routinely furnished each year, be broken down between remote and non-remote clinical training sites to permit a judgment as to whether the remote site training program has truly expanded -- or merely redistributed -- the clinical training capacity of the podiatric educational network.

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Each of the primary data collection methods outlined above was implemented, on a trial basis, through field visits to the three grantee institutions. The data gathered, however, were designed to serve at most a baseline or pretest purpose. They are patently inadequate to permit judgments as to whether or not the program has been accomplishing its three fundamental primary objectives:

-- recruiting and retaining students who reside in areas having shortages of podiatric manpower

-- serving as role models in attracting shortage area students to the study of podiatric medicine

-- serving as "magnets" for students (of whatever origin) to ultimately establish practice at or near the remote site or other underserved area

The attainment (or non-attainment) of these goals will not be evident until a formal evaluation, using the products of this study, has been performed. There is evidence, however, from the field visits that the program has made a useful start with respect to some of the other, secondary objectives: students at the remote sites were reportedly "seeing more patients, taking more responsibility for patients, and encountering a broader range of experience than

at the other clinics" (see page 45 of Comprehensive Final Report). While reports of this nature are anecdotal and one-sided (similar evidence was not solicited from students at the non-remote sites), such reports -- received from the students, not from their supervisors -- could easily have gone in the other direction. It is informative that they did not.

Equally informative are the students' reactions to their remote site experience in terms of preferred practice locations. Of the eleven students with opinions, seven were positive (inclined to consider practicing in a shortage area), four were negative. While this slight positive edge, based on limited evidence, is not particularly impressive, what is impressive are the individual comments (cf., pp. 37-38 of the Comprehensive Final Report): for example, the two Iowa students who had "originally wanted to practice in a rural area" whose clinical experience reinforced that objective; the three Pennsylvania students who "would not have originally considered St. Louis as a practice site" for whom such a site was now a definite possibility; and the three Iowa students who stated that "the success of the rural clinics in attracting patients had the positive effect of demonstrating the feasibility of setting up a rural practice."

Anecdotal reports do not of course an evaluation make: the existence of a positive payoff for this program ultimately depends on:

a. The numbers of students from shortage areas attracted to the study of podiatric medicine who would otherwise have turned to other professions,

b. The numbers of students, regardless of origin, who were attracted to establish practice in shortage areas,

c. The volume of foot care provided to underserved populations in need of such care,

as well as in the expanded training capacity, increased public awareness, and other objectives listed earlier.

Is it possible, in the near future, to evaluate the attainment of these objectives? This study concludes that it is.

PREFACE

This report documents the development of an evaluation design for the Podiatric Medicine Training Grant Program, a Federal initiative designed to provide support for clinical training of third- and fourth-year podiatric medical students in areas characterized by shortages of podiatrists.

The intent of the program, stated in the enabling legislation (the Omnibus Budget Reconciliation Act of 1981) and other program directives, is to assist in alleviating the present geographic maldistribution of podiatrists by inducing greater numbers of students from shortage areas to undertake the study of podiatric medicine. Indirect (unstated) goals include the inducement of students, trained in shortage areas, to remain in shortage area practice following completion of their educational requirements.

The evaluation strategy and associated instrumentation developed under this project are designed to provide a framework for assessing the attainment of those and other program goals. The design is modular: portions of it may be performed independently of the others or not at all. The design was developed with due consideration for cost containment; it is intended to be both comprehensive and low-cost.

ACKNOWLEDGEMENTS

The Project Director for this effort was Robert A. Capone, Executive Director of the American Association of Colleges of Podiatric Medicine (AACPM). He was assisted by Daniel Driscoll and Chris Kelly of AACPM staff and by Mandex, Inc. Leonard Greenberg, Vice President of Mandex, served as Task Leader for the evaluation design; he was assisted by Joel Ann Todd.

The project was supported by an Advisory Panel consisting of:

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James E. Bates, D.P.M., President, Pennsylvania College of Podiatric Medicine

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Charles L. Jones, DPM, Chairman, Council on Podiatric Medical Education

Leonard A. Levy, D.P.M., M.P.H., Dean of the College of Podiatric Medicine and Surgery (Iowa)

Harold Ornstein, representing the American Podiatric Medical Students' Association

Donald Buysse, Chief of the Multidisciplinary Training Programs Section in the Division of Medicine of the Bureau of Health Professions (BHPr), was the Government Project Officer. Federal officials consulted at the outset of the project for their views on program objectives were:

James E. Secrest, Ph.D., Multidisciplinary Resource Development Branch, Division of Medicine, BHPr

Clay E. Simpson, Ph.D., Director, Division of Disadvantaged Assistance, BHPr

Howard V. Stambler, Director, Office of Data Analysis and Management, BHPr

Robert Walkington, Director, Office of Program Development, BHPr

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ABSTRACT OF MAIN TEXT

The Podiatric Medicine Training Grant Program, designed to support the establishment of podiatric clinical training sites in areas with shortages of podiatrists, is currently in its second year of funding. The purpose of this project is to develop a suitable evaluation design and associated baseline data for future use in evaluating this Federal grant program.

Since the primary purpose of establishing clinical training sites in podiatric shortage areas is to attract shortage area students to the study of podiatric medicine, the evaluation design focuses on the extent to which that goal has been met. Other potential program effects addressed by the evaluation design include: the extent to which students trained in podiatric shortage areas return to those areas to practice, the volume and character of the foot care delivered to the indigenous population, and the possibility that the sites might serve as an entry point to the health care delivery system for patients previously denied such access.

The evaluation design consists of six options involving primary data collection. Four of those options are surveys, directed toward the following groups: applicants to the colleges of podiatric medicine, patients treated at program-supported clinics, high school and college faculty and career advisors in the areas served, and (ultimately) podiatric medical graduates practicing in shortage areas. The remaining two primary data collection options involve personal interviews: of the clinical trainees and of their supervisors.

Three secondary data options, making use of existing data bases, are proposed. They are: a time series analysis of the geographic distribution of applicants, a similar analysis of the number and percentage of podiatrists practicing in shortage areas, and an analysis of the distribution of patient-student encounters at program-supported versus non-program-supported clinical training sites.

The report concludes, based on field visits to the three grantee institutions and their associated clinical training sites, that the evaluation options proposed herein are feasible and can be conducted at relatively low cost. Baseline data, where available, are presented.

MAIN TEXT

1. Purpose of the Project

In an environment of deep budgetary cuts aimed at ultimate reduction of the Federal deficit, it is increasingly important that every program supported by Federal funds be examined in the light of:

a. Whether or not the program is meeting its stated objectives.

b. The usefulness of those objectives.

The Podiatric Medicine Training Grant Program, designed to support clinical training of podiatric medical students in underserved areas, is no exception. Authorized in 1981, the program received an initial appropriation of one million dollars in 1984 and a second appropriation of slightly under that amount in 1985. Although there appears to be strong Congressional support for program continuation,[1] the program -- no less than any other -- ultimately needs to be justified through formal evaluation.

The purpose of this project is to develop a suitable framework for conducting such an evaluation. The framework to be developed consists of two major components:

a. A detailed evaluation design, including necessary instrumentation.

b. Baseline data against which data gathered through future evaluations may be compared.

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[1] In a recent funding bill, the Senate noted that:

"The country is currently experiencing a critical shortage of practicing podiatrists. Apart from its effect on the general population, the shortage is having a particularly severe impact on poor and elderly persons living in medically underserved areas. The Committee therefore expects that a portion of the funds provided ... be used to continue the Podiatric Medicine Training Grant program at the fiscal year 1985 funding level."

2. Background Discussion

This section is devoted to a discussion of the background and historical setting in which the Podiatric Medicine Training Grant Program arose and of the issues which, to date, underlie its justification.

The Supply and Distribution of Health Professionals: A Mandate for Action

Within the past several decades, as both private health insurance and publicly funded health programs have brought quality health care within the reach of most Americans, public concern regarding the supply and distribution of health professionals has mounted.

In 1976, Congress reaffirmed its commitment toward addressing this concern, declaring that

> "(1) the availability of high quality health care to all Americans is a national goal;
>
> "(2) the availability of high quality health care is, to a substantial extent, dependent upon the availability of qualified health professions personnel; and
>
> "(3) there are many areas in the United States which are unable to attract adequate numbers of health professions personnel to meet their health care needs."[1]

Within the same legislative enactment, Congress further declared:

> "(1) health professions personnel are a national health resource and the Federal Government shares the responsibility of assuring that such qualified personnel are available to meet the health care needs of the American people;

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[1] P.L. 94-484, Health Professions Educational Assistance Act of 1976, Sec. 2(a).

"(2) it is therefore appropriate to provide support for the education and training of such personnel; and

"(3) at the same time it is appropriate to provide such support in a manner which will assure the availability of health professions personnel to all of the American people."

Historically, Federal efforts to improve the supply and distribution of health professionals have taken many forms: scholarships, preceptorship programs, various loan forgiveness and repayment programs. These initiatives, designed to induce graduates to practice in shortage areas, have enjoyed limited success. A U.S. General Accounting Office (GAO) study, released in 1974, reported that the loan forgiveness program in existence between 1965 and 1971 had attracted less than 1% of the estimated 30,000 medical and dental school graduates who had received loans in that period.[1] GAO concluded that (a) the offer of loan cancellation was an insufficient inducement for students to practice in shortage areas, and (b) the vast majority of students who accepted the offer would have practiced in the given shortage area in any event, i.e., the "inducement" was in effect a windfall, an undesirable use of Federal funds.

Recognizing these inadequacies, Congress modified the inducement from forgiveness (limited, necessarily, to Federal loans) to repayment. Under this new feature, the government agreed to repay up to 85% of a student's qualifying loans, from all sources, in return for up to three years of shortage area service. This feature proved equally unavailing: two studies — one in 1978 by GAO[2] and one in 1981 by Mandex, Inc.[3] — reaffirmed the original GAO findings. Both studies found that financial inducements were of limited appeal, that the factors of overriding importance in a student's choice of practice location were (a) environment (both professional and geographic) and (b) family ties.

---

1 U.S. General Accounting Office, Congressional Objectives of Federal Loans and Scholarships to Health Professions Students Not Being Met, May 14, 1974.

2 U.S. General Accounting Office, Progress and Problems in Improving the Availability of Primary Care Providers in Underserved Areas, August 22, 1978.

3 Mandex, Inc., Evaluation of the Health Professions Loan Repayment Program, December 30, 1981, Contract No. HRA 232-80-0044.

These findings, however, suggested an alternative strategy for attracting health professional graduates to practice in shortage areas. Instead of offering financial inducements to students from non-shortage areas whose ties are likely to be of short duration, emphasis should be placed on recruiting and retaining students from shortage areas whose ties are more likely to be permanent. The Podiatric Medicine Training Grant Program represents such a strategy.

The Supply and Distribution of Podiatrists

The undersupply and maldistribution of podiatrists, more perhaps than that of any other health profession, has been amply documented. In the first quarter of 1970, in a survey conducted by NCHS, there were almost four times as many podiatrists per 100,000 population in the Northeast as there were in the South; there were almost seven times as many podiatrists per 100,000 in the Middle Atlantic states (New York, New Jersey, and Pennsylvania) as there were in the East South Central states (Kentucky, Tennessee, Alabama, and Mississippi). By the fourth quarter of 1974 — the time of the next subsequent NCHS survey of podiatrists — these imbalances had barely changed. Exhibit 1 (next page) shows the difference in podiatrist-to-population ratios, by geographic region and division, between the first quarter of 1970 and the last quarter of 1974.

Intensive recruitment in the years subsequent to 1974 has done much to increase the supply of podiatrists and indeed the basic geographic balance, on a regional basis, has improved. In its third biennial Report to the President and Congress, the Bureau of Health Professions estimated that as of December 31, 1980, the number of podiatrists per 100,000 population had risen to 4.1 in the West (from 3.0 in both 1970 and 1974) and to 2.5 in the South (from 1.6 in 1970 and 1.7 in 1974).[1]

Despite these regional increases, however, severe local shortages remain. The 1980 Report to the President and Congress stated that there were "about 2,238 counties in the United States without a podiatrist." As of June 30, 1981,

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[1] Bureau of Health Professions, A Report to the President and Congress on the Status of Health Professions Personnel in the United States, Health Resources Administration, DHEW Publication No. (HRA) 82-2, January 1982.

EXHIBIT 1.

Number of Podiatrists Providing Patient Care per 100,000 Population, By Geographic Area of Practice: 1970 and 1974

Geographic area of practice	Year of survey		Change, 1970-74
	1970	1974	
	Number of podiatrists		
United States	3.5	3.4	-0.1
Geographic region			
Northeast	6.1	5.8	-0.3
North Central	3.7	3.4	-0.3
South	1.6	1.7	+0.1
West	3.0	3.0	0.0
Geographic division			
New England	5.9	5.1	-0.8
Middle Atlantic	6.2	6.0	-0.2
East North Central	4.2	4.0	-0.2
West North Central	2.2	2.0	-0.2
South Atlantic	1.9	2.1	+0.2
East South Central	0.9	0.9	0.0
West South Central	1.5	1.5	0.0
Mountain	2.5	2.4	-0.1
Pacific	3.1	3.2	+0.1

SOURCE: Greenberg, L. Trends in the Podiatric Profession: A Comparative Study of 1970 and 1974 Survey Data, DHEW Publication No. (PHS) 79-1816, November 1978, p. 19.

NOTE: Geographic "regions" and "divisions," as defined by the U. S. Bureau of the Census, are as follows:

Region	Division	States Included
Northeast	New England	ME, NH, VT, MA, RI, CT
	Middle Atlantic	NY, NJ, PA
North Central	East No. Central	OH, IN, IL, MI, WI
	West No. Central	MN, IA, MO, ND, SD, NE, KS
South	South Atlantic	DE, MD, DC, VA, WV, NC, SC, GA, FL
	East So. Central	KY, TN, AL, MS
	West So. Central	AR, LA, OK, TX
West	Mountain	MT, ID, WY, CO, NM, AZ, UT, NV
	Pacific	WA, OR, AK, CA, HI

DHHS had designated a total of 1,403 podiatric manpower shortage areas throughout the country. The total resident population of these areas stood at over 87 million persons, over twice that for any other health profession.[1]

The implications of these shortages can be profound to those who are presently in need, or who may be in the future, of foot care. Podiatrists are especially trained in the care of the foot, in detecting and correcting gait problems, and in recognizing systemic disorders with primary or secondary manifestations in the foot. They render palliative and remedial care, provide both medical and surgical services, make diagnoses, and prescribe pharmaceuticals.

While there is a degree of overlap between the care provided by podiatrists and that provided by orthopedic surgeons and other medical doctors, there are several important differences in the treatment patterns which distinguish these specialties. As reported by the American Podiatric Medical Association:[2]

> "A greater percentage of the foot care provided by medical doctors and osteopaths, as opposed to podiatrists, is devoted to the treatment of injuries and clubfoot; in contrast, podiatrists devote a greater percentage of their practice to the treatment of soft tissue complaints and flatfoot. Inter-specialty differences with respect to other foot disorders such as bacterial and fungal infections, static foot deformities other than clubfoot and flatfoot, etc., are relatively minor, although podiatrists, because of their concentration upon one part of the body, tend to treat a greater volume of such cases. Specifically, podiatrists treat about nine times as many soft tissue complaints as medical doctors and osteopaths, about three times as many static foot deformities, but only one-sixth as many foot injuries."

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1 Division of Health Professions Analysis, Bureau of Health Professions, Selected Statistics on Health Manpower Shortage Areas, Report No. 82-2, November 1981. (See also 1982 Report to the President and Congress, p. A-19.)

2 American Podiatric Medical Association, An Assessment of Foot Health Problems and Related Health Manpower Utilization and Requirements, Volume 1, August 10, 1976, p. ii, Contract No. HRA 231-75-0210.

A community lacking a podiatrist, or with too few podiatrists for its size, is limited in its ability to attend to the foot care needs of the indigenous population. This is particularly the case if there are too few medical doctors and osteopaths as well, frequently the case in small communities. While it is safe to assume that foot problems of sufficient severity will be treated regardless of the presence or absence of a foot care specialist, problems which are latent or of only marginal severity may well go untreated (and undetected) until the medical and financial consequences of the disorder have mounted, at a cost to both the individual and, in the case of medical entitlement prorams, to the taxpayer as well.

A major factor underlying the maldistribution of podiatrists has been the limited number of locations at which podiatric education is offered. As shown in Exhibit 2 (next page), the majority of podiatrists practice in the five states which, until recently, were the only jurisdictions in which colleges of podiatric medicine were located. (A sixth college, the Iowa College of Podiatric Medicine and Surgery, began enrolling students in 1982; a seventh, the Barry University School of Podiatric Medicine in Florida, opened in 1985.) The five states in question — New York, California, Pennsylvania, Ohio,and Illinois — contain only a third of the nation's resident population (74 million out of 220 million), yet account for over half of its podiatrists (4,363 out of 8,340).

The highly skewed distribution of podiatrists shown in Exhibit 2 is evidenced by the fact that states six through ten have a collective podiatrist-to-population ratio lower than that for the nation as a whole (3.7 per 100,000 as opposed to a 3.8 national average). The situation, moreover, shows no sign of improvement: the recent geographic distribution of entering podiatry students remains as heavily skewed as that of the profession at large. Of the 718 first-year students enrolled in 1979, well over half (54%) were from New York, California, Pennsylvania, Ohio, or Illinois; only 46% were from other states. That ratio remained basically unchanged in 1980 and 1981, then widened in 1982 and 1983 as shown in Exhibit 3 (page 9).

EXHIBIT 2.

States with Greatest Number of Active Podiatrists
December 31, 1979

(Rank)	State	Number of Active Podiatrists	Resident Population (in thousands)	Podiatrists Per 100,000 Population
(1)	New York*	1,370	17,649	7.8
(2)	California*	1,063	22,696	4.7
(3)	Pennsylvania*	690	11,731	5.9
(4)	Ohio*	621	10,731	5.8
(5)	Illinois*	619	11,230	5.5
(6)	Michigan	402	9,208	4.4
(7)	Florida	372	8,860	4.2
(8)	Texas	330	13,385	2.5
(9)	New Jersey	281	7,332	3.8
(10)	Massachusetts	268	5,769	4.6
States (1)-(5) combined		4,363	74,037	5.9
States (6)-(10) combined		1,653	44,554	3.7
All others combined		2,324	101,508	2.3
Total United States		8,340	220,099	3.8

* States with colleges of podiatric medicine as of 1979.

SOURCE: Division of Health Professions Analysis, Bureau of Health Professions, Supply of Manpower in Selected Health Occupations: 1950-1990, DHHS Publication No. (HRA) 80-35, September 1980, pp. 48-49.

EXHIBIT 3.

Geographic Distribution of First-Year Podiatric Medical Students
1979-1983

	Number of First-Year Students	Breakdown by Legal Residence: NY, CA, PA, OH or IL		Elsewhere	
		No.	Pct.	No.	Pct.
1979	718	391	54%	327	46%
1980	695	372	54%	323	46%
1981	702	378	54%	324	46%
1982	686*	388	57%	298	43%
1983	639*	372	58%	267	42%

* Not including Iowa College of Podiatric Medicine and Surgery.

Iowa, not unexpectedly, represents the first major sign of change. At the Iowa college, the 1982 entering class numbered 38, of whom less than half (17) were from the "big five" states. In 1983, the percentage of big five students was even lower — 13 out of 50. These numbers are of small nationwide impact, however; adding them to the figures shown in Exhibit 3 does little to unskew the overall distribution: even with Iowa added, the ratio of students in the big five states to those in all other states combined was higher in 1982 and 1983 (56:44) than it was in the three years preceding.

The Nation's Colleges of Podiatric Medicine: A Brief Overview[1]

Since New York was the first state to license podiatrists, it is natural to expect the first school of podiatry to develop there. In fact, that is what happened; in 1911, the New York School of Chiropody was founded in New York City. It was renamed as the First Institute of Podiatry in 1919, in 1939 as the Long Island First Institute of Podiatry, in 1948 as the Long Island University College of Podiatry, in 1957 as the M. J. Lewis College of Podiatry, and in 1972 as the New York College of Podiatric Medicine.

In 1912, William M. Scholl, M.D., founded the Illinois College of Chiropody and Orthopedics in Chicago, Illinois. In 1916, it was renamed as the Illinois College of Chiropody, in 1928 as te Illinois College of Chiropody and Foot Surgery, in 1962 as the Illinois College of Podiatry, and in 1969 as the Illinois College of Podiatric Medicine. In 1981, its name was changed again, this time to the Dr. William M. Scholl College of Podiatric Medicine.

In 1914, the California College of Chiropody was founded in San Francisco, Callifornia. In 1962, the college was renamed as the California Podiatry College, and in 1969 became the California College of Podiatric Medicine. Until 1982, it was the only college of podiatric medicine west of the Mississippi River. Others had existed before but for only short periods of time and without national accreditation.

In 1916, the Ohio College of Chiropody was founded in Cleveland, Ohio, after the Ohio legislature gave official recognition to podiatry as one of the essential branches of the medical profession. In 1963, the name was changed to the Ohio College of Podiatry and, in 1969, to the Ohio College of Podiatric Medicine.

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[1] The material in this section is extracted, with minor revisions, from the Task 3 Final Report of a Podiatric Medical Education Study performed by the American Podiatric Medical Association under contract to the Bureau of Health Professions (Contract No. 232-80-0058). Mr. Robert Capone, Executive Director of the American Association of Colleges of Podiatric Medicine and Project Director of the present study, was the Task Leader for this earlier effort.

In 1963, the Philadelphia College of Chiropody was founded in Philadelphia, Pennsylvania. Like the other colleges, its name was changed first in 1964 to the Pennsylvania College of Podiatry and then, in 1969, to the Pennsylvania College of Podiatric Medicine.

In September 1982, a new college of podiatric medicine began enrolling students, bringing a total number of existing colleges to six. Unlike the other five free standing colleges, this college, the College of Podiatric Medicine and Surgery, is a part of a health science center. Located in Des Moines, Iowa, it is a division of the University of Osteopathic Medicine and Health Science.

A seventh college of podiatric medicine, associated with Barry University in Florida, opened in 1985.

The Role and Importance of Clinical Training

Clinical experiences are an important part of the student's development as practitioners. For this purpose, all of the colleges operate outpatient clinics; one college also operates an inpatient hospital. Each of the colleges is affiliated with one or more hospitals where students acquire skills in medical, surgical, and podiatric clinics. Additionally, the colleges have extension clerkship programs in extension clinics such as nursing homes and community health centers. In 1981, this variety of sites accounted for well over three-quarters of a million patient contacts. For the most part, students' clinical experiences begin in year one and increase through year four. Expectedly, each college differs from the others in its approach to providing clinical experiences due to existing resources (facilities, patient load, full and part-time faculty).

In the first two years of the podiatric medical curriculum, clinical experiences of students are somewhat limited. During the first year, the colleges attempt to provide at least clinical observational and clinical correlational assignments to students. These activities provide students with an orientation to the practice of podiatry, with opportunity to begin developing proper professional attitudes, and with opportunity to find meaning and relevance of the

basic science portion of the curriculum. During the second year, the colleges attempt to give students greater involvement to patient care. These experiences often involve history taking, laboratory studies, and performing diagnostic procedures. These activities provide students with an opportunity to develop manual and intellectual skills attendant with the basic science and clinical science portions of the curriculum, with an opportunity to apply didactic information and integrate it with the realities of patient care, and with an opportunity to begin to develop their own styles of practice.

Although each college has its own affiliated foot clinic for educational purposes, several factors have prevented a concerted, integrated third- and fourth-year clinical curriculum. The more major of these factors have been:

a. Medicare and Medicaid programs have made private medical care available to the elderly and poor, thus reducing their incentive to seek low-cost or free health care at the colleges' clinics.

b. Third-party reimbursement has made private practice more lucrative to practitioners and has attracted them away from the role of clinical faculty at the colleges.

c. Health manpower legislation and other grants enabled colleges to enlarge and improve their foot clinics but also increased the number of graduates. The result has been a marked decrease in the patient-to-student ratio.

The first year clinical experiences in the free-standing colleges are primarily in the foot clinics of the colleges but may include assignments in affiliated health care facilities (e.g., nursing homes) or hospitals. The latter allows for rotations through general medical and surgical departments. The clinical services in the foot clinics usually are organized departmentally and allow students concentrated exposure to specific pathological conditions (e.g., diabetes or peripheral vascular diseases) or to specific types of patients (e.g., pediatrics or geriatrics). Too often, because of factors cited previously, third-year students are assigned or teamed with fourth-year students. In these

situations, third-year students are frequently seen as assistants to the fourth-year students and have patient care responsibilities only as they are delegated. Too often these are the routine or less interesting activities associated with treatment and management of patients.

To meet the challenges and problems related to clinical education in their affiliated foot clinics, colleges of podiatric medicine have sought to provide additional educational experiences. These have been labeled externships and clerkships. Although they are sometimes available to third-year students, they are primarily for fourth-year students. Externships are defined as those clinical experiences conducted within a hospital environment; clerkships are defined as those clinical experiences conducted within other health care delivery systems, including health maintenance organizations, private offices, group practices, and podiatric clinics. Externships and clerkships average six weeks in length. Progress has been made by the colleges in providing structure to the externship and clerkship programs. One important aspect of the externship and clerkship programs as they exist in the colleges (Exhibit 4) is that they provide a foundation upon which to build an effective fourth-year curriculum.

EXHIBIT 4.

Fourth-Year Education Programs at the Five Free-Standing Colleges of Podiatric Medicine

Clinical Activity	Combined Length of Experience (Weeks)				
	Calif.	Scholl	N.Y.	Ohio	Pa.
College Clinic	28	16	33	24	26
Hospital Externship	12	16	13		16
Office Clerkship	4	10	—	8**	4
Allied Clinic*	—	—	—	—	4
Elective Time	4	8	2	16	6
Vacation	4	2	4	4	6

* Nursing homes, acute care facilities, long-term care facilities.

** No clearcut distinction made between hospital externships and office clerkships.

The Podiatric Medicine Training Grant Program

The clinical training programs outlined above are primarily directed toward improving the quality of podiatric medical education rather than alleviating the problem of maldistribution; very few of these programs are located in areas of podiatric shortage. Acting on the assumption that clinical training sites located explicitly in shortage areas might serve to induce students trained at those sites to practice in those areas, Congress in 1981 authorized the Podiatric Medicine Training Grant Program, the subject of this study.

The vehicle for this authorization was the Omnibus Budget Reconciliation Act of 1981. Specifically, the Public Health Service Act was amended by adding a new section 788(e) under Title VII, authorizing special projects for podiatric medical education:

"(e) The Secretary may make grants to and enter into contracts with schools of podiatry to assist in meeting the costs to such schools of providing projects to:

"(1) recruit students who reside in areas having shortage of podiatric manpower, as determined by the Secretary; and,

"(2) operate clinical training programs at public or non-profit private entities located in such areas."

The key elements in this initiative are (a) recruitment in shortage areas and (b) remote site clinical training. Recruitment in shortage areas is perceived as a device for drawing to the study of podiatric medicine, shortage area residents who might otherwise turn to other professions. Remote site clinical training is perceived as a device for retaining, at or near the training site, both shortage area and (possibly) non-shortage area students trained at that location.

For the three subsequent years following the 1981 Congressional action, the Administration proposed funding for the program. Despite strong bipartisan support, the lack during this period of a regular appropriations bill for the U.S. Department of Health and Human Services blocked funding of the program by Congress. For fiscal year 1984, the Administration again proposed, and this time received, a $1 million appropriation for this effort.

Applications for remote site training grants were submitted by five of the six colleges of podiatric medicine, and reviewed by the National Advisory Council on Health Professions Education at its April-May 1984 meeting. Awards were announced shortly thereafter, with initiation of remote site efforts beginning with the 1984-85 academic year.

While it is expected that the remote site clinics will eventually develop a sufficient caseload to become self-sustaining, Federal funds are necessary in the initial years to assure a strong start for this important effort. Recognizing this need, the Administration requested — and Congress approved — a second year of funding (FY 1985) in the amount of $950,000.[1]

Three of the five colleges which submitted grant applications in 1984 received funding, in the amounts shown below:

	Recommended Level of Funding	
	First Year	Total
College of Podiatric Medicine and Surgery (Iowa)	$516,000	$1.2 million
Pennsylvania College of Podiatric Medicine	$380,000	$1.3 million
California College of Podiatric Medicine	$ 93,000	$372,000

Of the proposals submitted by the other two colleges, one was found acceptable but disapproved for insufficient detail; the other received a priority insufficient for funding within the available appropriation.

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[1] Funding for FY 1986 in the same amount appears likely.

Implementation of the three Podiatric Remote Site Training Programs began in July 1984. Highlights of these programs are provided below:

Iowa

- o Clinical locations: Osceola, Audubon, Iowa Falls, and Webster City (satellite office).
- o Recruitment methods:
  - (i) Recruiters visit high schools and college campuses in Iowa and surrounding states to promote podiatric medicine.
  - (ii) Area high school and college students have the opportunity to work part-time as assistants in the clinics.
- o Other program features:
  - (i) Full-time supervisor has been assigned to each clinic, and serves as faculty.
  - (ii) Staff conducted community survey by telephone to assess need and provide baseline data.

Pennsylvania

- o Clinical locations: Pittsburgh and St. Louis initially. Baltimore added one year later.
- o Recruitment methods:
  - (i) Visited undergraduate schools in remote site areas and brought students and advisors to PCPM campus for one-day sessions.
  - (ii) Use local podiatrists as consultants to undergraduate premedical advisement programs in APMEC (Accelerated Podiatric Medicine Education Curriculum) institutions.
  - (iii) Increased number of APMEC agreements in targeted areas.
  - (iv) Produced and distributed a videotape promoting podiatry as a career option.
- o Other program features:
  - (i) Clinical training is hospital-based: Podiatry Hospital of Pittsburgh and Lindell Hospital in St. Louis.
  - (ii) No new faculty were hired — program was incorporated into existing hospital system.
  - (iii) Students spend three months at remote clinic.

California

- o Clinical location: East Los Angeles.
- o Recruitment methods:
  - (i) Increased emphasis by recruitment director on East Los Angeles area, and on minority recruitment.
  - (ii) Participation in national and regional college health fairs.
- o Other program features:
  - (i) Purchased an existing (office-based) practice that is affiliated with general hospital.
  - (ii) Students spend nine months at clinic and affiliated hospital.
  - (iii) Hired two part-time clinical supervisors, who also serve as faculty.

3. Methodology

3.1 Statement of Program Objectives

Generally speaking, the first step in any evaluation is to establish a clear-cut statement of program objectives. A useful starting point for understanding the objectives of the Podiatric Medicine Training Grant Program is provided by the Bureau of Health Professions' Program Guide, which states that:

> "These grants are intended to assist in the alleviation of the present geographic maldistribution of podiatrists by recruiting students from and providing clinical training in areas that are now underserved."[1]

This statement of program intent embodies a mixture of process and outcome objectives — two "whats" and one "why." The "whats" are:

a. "recruiting students from", and

b. "providing clinical training in"

areas that are currently underserved.

The "why" is: "to assist in the alleviation of the present geographic maldistribution of podiatrists".

Each of these is a legitimate program objective. There are other possible candidates, however. Many programs have potential spin-off effects, i.e., are characterized by secondary objectives which, if met, serve to produce an impact over and above that primarily intended. This is the case in the present instance: the Podiatric Medicine Training Grant Program does indeed feature a number of secondary objectives, inferrable from the intent of the legislation. Among these are the following:

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[1] Bureau of Health Professions, Program Guide: Grants for Podiatric Medicine Training, January 1984. This statement essentially repeats that contained in the original legislation, cited on page 14 of this report.

a. Useful Service to the Underserved. - Providing, through the clinical training facility, needed foot care not currently being provided.

b. Attending to the Needs of the Elderly. - A special case of the above.

c. Boost to Minority Recruitment. - Providing a "role model" useful in attracting members of the indigenous population to study podiatric medicine regardless of where they ultimately choose to practice.

On January 25, 1985, following meetings with several key Federal officials, members of the AACPM project staff and its subcontractor, Mandex, Inc., met with the Project Advisory Panel and the Government Project Officer, Mr. Donald Buysse, to outline a complete set of program objectives, both primary and secondary. Primary objectives were defined as those which

"are stated or strongly implied either in the legislation or in the BHPr Program Guide."

Secondary objectives were defined as those which

"are not explicitly stated (i.e., in either the legislation or the BHPr Program Guide) but can be reasonably inferred."

A second distinction was drawn at this meeting: objectives which could not be evaluated until the program had been in operation for at least three to five years were defined as "long-term"; those which could be evaluated in less than that time were defined as "short-term." This distinction was deemed relevant in establishing an evaluation strategy: until the long-term objectives of the program can be meaningfully measured, suitable short-term objectives must be defined in order that reasonable decisions concerning program continuation may be made.

The full set of program objectives developed at this initial panel meeting is shown in Exhibit 5 (next page).

EXHIBIT 5. Initial Statement of Program Objectives

SHORT-TERM OBJECTIVES	Of primary importance (i.e., stated or strongly implied either in the legislation or the BHPr Program Guide)
	1. To recruit and retain students who reside in areas having shortages of podiatric manpower. 2. To operate clinical training programs at public or non-profit private entities located in such areas or in locations which serve such areas. a. To serve as role models in attracting students to the study of podiatric medicine. b. To serve as "magnets" for students to ultimately set up practice in those or other underserved areas.
	Of secondary importance (not explicitly stated but nonetheless inferrable)
	3. To provide needed primary foot care to currently underserved populations: a. In general b. The elderly c. The handicapped d. The chronically ill e. Minorities, the poor, and other populations at risk 4. To expand the existing training capacity of colleges of podiatric medicine. 5. To increase awareness by the public, other health professions, and social/health agencies of the role of podiatric medicine in disease prevention and health promotion. 6. To attract and retain practitioners at remote sites by providing a formal link with the podiatric educational network. 7. To provide an entry point to the health care delivery system for patients suffering from systemic disorders with pedal manifestations.
LONG-TERM OBJECTIVES*	Of primary importance
	8. To assist in the alleviation of the present geographic maldistribution of podiatrists.
	Of secondary importance
	9. To reduce morbidity and disability among the populations served.

* Long-term objectives include all of the short-term objectives as well.

3.2 Ensuing Steps in the Evaluation Design

The objectives listed in Exhibit 5 provided a framework for conducting all subsequent evaluation design. The ensuing steps in this process were as follows:

(1) Evaluation Strategy. - Following Project Officer approval of the initial Statement of Objectives, an evaluation strategy was developed for establishing whether or not each of those objectives had been met. The strategy consisted of one or more methods of data collection and analysis for each stated objective. The strategies developed were the subject of a second Advisory Panel meeting held on March 7, 1985.

(2) Outcome and Process Variables. - Following revisions to the proposed strategies suggested by the Advisory Panel, a list of associated outcome and process variables was developed and submitted for Project Officer approval on April 30, 1985.

(3) Preliminary Data Collection Instruments. - Upon approval of the proposed outcome and process variables, a series of associated data collection instruments was developed. Two classes of instrumentation were proposed: (a) survey forms (designed to gather data from target groups not explicitly located at the remote training sites) and (b) structured interview guides (designed to be administered to the clinical trainees and supervisors at each site). The specific forms developed within each of these classes are briefly described below:

Survey Forms

SF-1: Directed toward applicants and/or inquirers seeking information on podiatric medicine as a career. Designed to establish the percentage of inquiries and/or applications resulting from activities related, directly or indirectly, to the Grant Program.

SF-2: Directed toward patients. Designed to establish the impact, both medical and attitudinal, of the remote site training program upon the patients treated.

SF-3: Directed toward high school and college career advisors and faculty. Designed to establish the program impact, if any, upon their attitudes and level of podiatric awareness.

SF-4: Directed toward recent podiatric medical graduates practicing in shortage areas. Designed to establish the basis for their location choice.

Structured Interview Guides

PI-1: Directed toward clinical trainees. Designed to gather data on (a) the practice location they currently prefer and (b) the motivational factors involved in that choice.

PI-2: Directed toward clinical supervisors. Designed to gather data on the motivational factors involved in their decision to participate in the remote site training program.

Facsimiles of these instruments, as ultimately refined, are contained in Appendices A through F. In addition, three sets of computer runs, designed to yield useful secondary data, were defined. Each of these items is described more fully in Section d, Results and Findings.

(4) Field Test. - The instrumentation resulting from the preceding step was the subject of the third (and final) Advisory Panel meeting held on June 10, 1985. The approved instruments were then field tested at each of the three grantee institutions and associated clinical sites. The purpose of the field test was two-fold:

(a) To establish the suitability of the proposed instruments and suggest possible modifications.

(b) To obtain baseline data for use in possible future evaluations. (Because of OMB restrictions, only the structured interview guides were used for data gathering. The survey forms were discussed but administered to only a limited sample of three per site.)

(5) Analysis Plan. - Following refinement of the data collection instruments resulting from the field test, both the refined instruments and an analysis plan were submitted on July 31, 1985. The analysis plan expanded upon the previously proposed evaluation strategy for each objective. Both primary and secondary methods of data collection and analysis were defined. Primary data collection was based on the survey forms and structured interview guides previously developed; secondary data collection made use of existing data bases available through the American Association of Colleges of Podiatric Medicine and the American Podiatric Medical Association.

(6) Draft Data Display. - This deliverable, submitted September 30, 1985, assembled all of the baseline data available (at that time) on each objective. The data consisted primarily of the results of the personal interviews conducted on the occasion of the field visits. (Survey data, as mentioned earlier, could not be gathered in sufficient quantity to serve a useful baseline purpose.)

(7) Instructions for Conduct of Future Evaluations. - Finally, a guide for conducting future evaluations of the Podiatric Medicine Training Grant Program was produced. Each proposed evaluation activity was described in terms of:

(a) Its purpose

(b) Its frequency and time span of data collection

(c) The proposed methodology, including necessary instrumentation

(d) Proposed methods of data analysis and presentation

The output of the foregoing series of steps is described, objective by objective, in Section d, Results and Findings, which follows.

4. Results and Findings

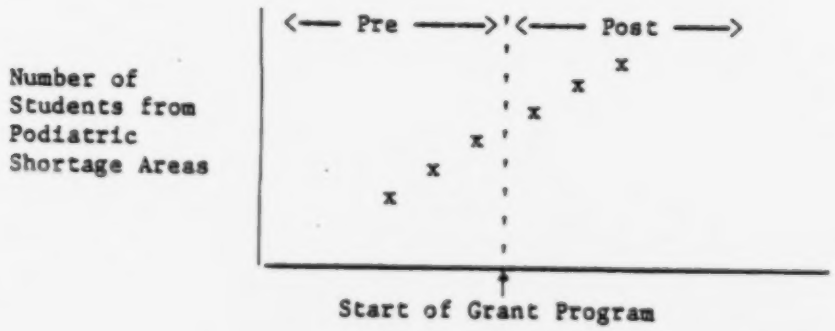
Objective No. 1 (Recruitment and Retention of Shortage Area Students)

a. Associated Research Hypothesis[1]

"The Grant Program has resulted in an increase in the number of podiatric medical students who reside in areas having shortages of podiatric manpower."

b. Proposed Evaluation Strategy

The difficulty in proving the stated hypothesis (as with most others) lies in the matter of causality — in demonstrating that the Grant Program actually created an increase in the number of students from podiatric shortage areas. Numeric gains do not in and of themselves denote causality; consider, for example, the following situation:



The continued rise in shortage area students may have had nothing to do with the Grant Program per se. It might simply be a response to prior recruitment efforts or to external forces such as the allopathic and osteopathic physician glut. In either case, it is not an effect for which Federal funding deserves credit; it would likely have taken place in any event.

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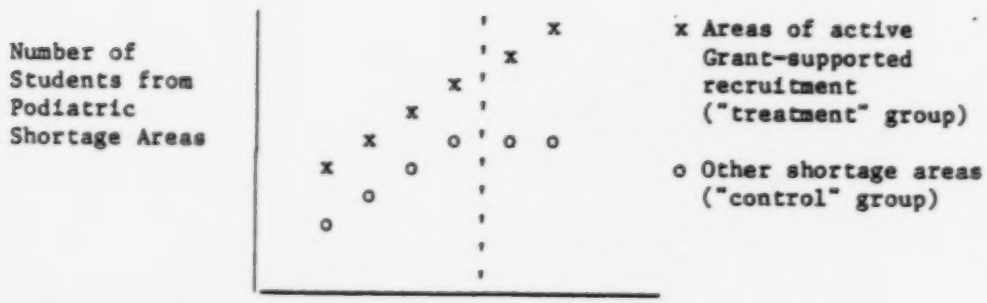
[1] Research hypotheses are carefully worded restatements of program objectives, generally couched in terms that are measurable. To each objective there corresponds an associated research hypothesis, sometimes more. The goal of evaluation research is to identify and gather the data needed to support (or refute) each such hypothesis.

Ambiguities of this sort are inherent in the use of ex post facto secondary data with no controls. A preferred alternative is to "invent" such controls by dividing the universe of podiatric medical students into two pseudo groups: treatment and control. The "treatment" group (those whom the Grant Program has had an opportunity to affect) are defined as those persons who live in shortage areas where there has been an increase in recruitment activity clearly linked to Grant Program support; the "control" group are those who live in shortage areas where there has been no such increase — where recruitment activity remains essentially at (or below) the level which existed prior to program implementation. If both the treatment and control groups were to show identical trends, it would be difficult to argue that the program had made a difference. If, however, the trends were to diverge (as, for example, in the case shown below), one might be justified in contending that the program had "worked".


Number of Students from Podiatric Shortage Areas
x Areas of active Grant-supported recruitment ("treatment" group)
o Other shortage areas ("control" group)

Other control groups worth considering include students from non-shortage areas. Time series comparisons involving treatment and control groups are possible at a number of stages within the podiatric application and educational process. Potentially useful items for comparison include:

(a) The number of inquiries received from potential applicants residing in both treatment and control group areas,

(b) The number in each group who eventually apply,

(c) The number in each group who are accepted and enrolled,

(d) The annual attrition rates associated with each group, and

(e) The number in each group who graduate.

Of these comparisons, items (a) through (d) can be addressed in the early years of the program; (e) will require at least four years before the full results are known.

These comparisons should be made both within and across schools. They should not be limited to the three grantee institutions since one school's recruitment activities may well lead to applications and/or enrollment at another (non-grantee) college.

Finally, to bolster these time series comparisons it is important there be conducted a corollary effort, directed explicitly toward students from shortage areas, to establish whether or not the Grant Program indeed influenced their career choice. Unless such supportive evidence is forthcoming, any conclusions based solely on time series analysis must be regarded as suspect. This point will be elaborated on in the section which follows.

c. Analysis Plan

The first step in implementing the proposed evaluation strategy is to establish, through interviews with the program staff at each grantee institution, which recruitment activities at what locations were made possible only through Grant Program support. Through this process, treatment and control groups may be identified for each institution. To permit finer, disaggregated analysis, it is proposed that there be identified two treatment and two control groups, as shown below:

- Treatment Group A: Persons from shortage areas in which there was active, clearly defined grant-supported recruitment activity. (Generally speaking, these are areas involving focused, personal contact, i.e., where grantee recruitment teams made visits to local high schools and colleges or, alternatively, local high school and college advisors visited the grantee campus. Shortage areas in which the clinical training sites are located are included in this category.)

- Treatment Group B: Persons from shortage areas in which there was grant-supported recruitment of a limited, diffuse nature. (Typical

activities which fall in this category include newspaper or magazine advertisements; posters in undergraduate, community, and junior colleges; and videotapes on podiatric medicine as a career.)

- Control Group A: Persons from shortage areas in which there was no grant-supported recruitment activity (or in which recruitment was essentially the same as it had been prior to the Grant Program).

- Control Group B: Persons from non-shortage areas.

Application of these classifications to the three current grantee institutions resulted in the treatment area designations shown in Exhibit 6.

The second step in the implementation process is to apply these treatment and control group designations to a defined set of individuals of interest. These could be applicants, inquirers, enrollees, or (eventually) graduates. If the stated hypothesis were true, one would expect the number of individuals in each set who reside in "treatment" areas to increase, over the years, relative to the number who reside in either (or both) of the control groups. If there were no such relative increase — i.e., if both the treatment and control groups were to increase (or decrease) at the same rate — one would be hard pressed to contend that the Grant Program had made a difference (with respect to this particular objective).

The simplest method for testing the stated hypothesis is to regard the number of individuals in the treatment group as a binomial percentage. The resulting variable may then be monitored over time and any changes tested for statistical significance. (An example of this application is presented in the following section.)

In any test of statistical significance, however, there is always the possibility of error. True impacts do not always show up as significant; results which are nominally significant do not always denote true impact. The preceding time series analysis, based as it is solely on secondary data, should therefore be supplemented with primary data gathered from at least a sample of the individuals involved. Of particular concern are the factor or factors

EXHIBIT 6. Designated Treatment Groups, 1985[1]

o College of Podiatric Medicine and Surgery (Des Moines)

(1) Treatment Group A (areas of active grant-supported recruitment):

Clinton, IA	Audubon, IA	Stearns, MN
Decatur, IA	Clarke, IA	Buchanan, MO
Marion, IA	Hardin, IA	Jackson, MO
Sioux, IA	Keokuk, IA	Nodaway, MO
Story, IA	Ramsey, MN	Douglas, NB

(2) Treatment Group B (areas of limited grant-supported recruitment):

None per se; all targeted shortage areas received active recruitment.

o Pennsylvania College of Podiatric Medicine

(1) Treatment Group A:

Jackson, IL	Cambria, PA	Westmoreland, PA
St. Louis, MO	Clarion, PA	Barbour, WV

(2) Treatment Group B:

Talledega, AL	Whitley, KY	Adams, PA
Fairfield, CT	Ramsey, MN	Indiana, PA
Alachua, FL	Hinds, MS	Lycoming, PA
Duval, FL	Cumberland, NC	Brunswick, VA
Hillsborough, FL	Jackson NC	Norfolk, VA
Leon, FL	Pasquotank, NC	Pierce, WA
Volusia, FL	Robeson, NC	
Madison, KY	Cherokee, OK	

o California College of Podiatric Medicine

(1) Treatment Group A:

East Los Angeles (Watts)

(2) Treatment Group B:

None

[1] Control groups were defined as follows: Control Group A consists of all DHHS-designated podiatric shortage areas (see Federal Register, May 8, 1981) not listed above; Control Group B consists of the remaining areas in the country (i.e., those not designated by DHHS as podiatric shortage areas).

which triggered the individual's interest in podiatric medicine as a career (see survey form SF-1, Appendix A). If appreciable numbers of treatment group members (or even control group members, for that matter) were to point to grant-related activities as a factor in their career choice, then regardless of the time series findings one would be justified in concluding that the program had had an impact. If, on the other hand, none of the individuals involved could point to a single instance in which they had interacted with a grant-supported activity, any positive conclusions resulting from the time series analysis must be held in abeyance pending further study.

Thus, two forms of data collection and analysis are proposed. The first is based on time series analysis applied to secondary data involving numbers of applicants, inquirers, enrollees, etc. The second is a direct survey of both the treatment and control group members involved. The survey form proposed for use in this regard, SF-1, is shown in Appendix A. Although designed primarily for use with applicants, the form can be used with other groups as well.

d. Available Baseline Data

Using the designations shown in Exhibit 6, the following data were extracted from AACPM files on the number of applicants to colleges of podiatric medicine in each of the years 1984 and 1985:

EXHIBIT 7. Geographic Distribution of Applicants to Colleges of Podiatric Medicine, 1984-85

	Number of Applications Received	
	1984	1985
Treatment Group A	7	15
Treatment Group B	19	27
Control Group A	168	184
Control Group B	717	831
Other (foreign, Puerto Rico, or no information)	61	29
Total	972	1,086

Baseline data could not be extracted on other categories (inquirers, enrollees, etc.) without undue effort well beyond the scope of this project.

e. Recommendations for Future Evaluation

It is recommended that AACPM be authorized (and funded) to:

(1) Provide data on the distribution of applicants, similar to that shown in Exhibit 7, each year.

(2) Monitor the designation of treatment and control group areas, shown in Exhibit 6, as additional recruitment activities are undertaken.

(3) Administer survey form SF-1 to all persons who apply for admission to colleges of podiatric medicine. (OMB clearance will be needed for this effort.)

(4) Conduct necessary survey follow-up to assure a high response rate.

(5) Monitor the progress of applicants from treatment group areas, i.e., how many are eventually enrolled and their attrition rates by year.

Analysis of the data resulting from these efforts could be performed either by AACPM or, if preferred, by an independent evaluation contractor.

Of the two sets of data thereby obtained, analysis of the time series data presents an interesting methodological challenge. As stated earlier, the simplest method for analyzing these data is to express the number of applicants from each of the two treatment groups (or from the two groups as a single composite) as a binomial variable.

EXAMPLE: In 1984, the percentage of applications received from Treatment Group A was 0.72% (7 out of 972). In 1985, the percentage rose to 1.38% (15 out of 1,086). Was the increase significant?

Answer: No. The standard deviation of the difference between these percentages is

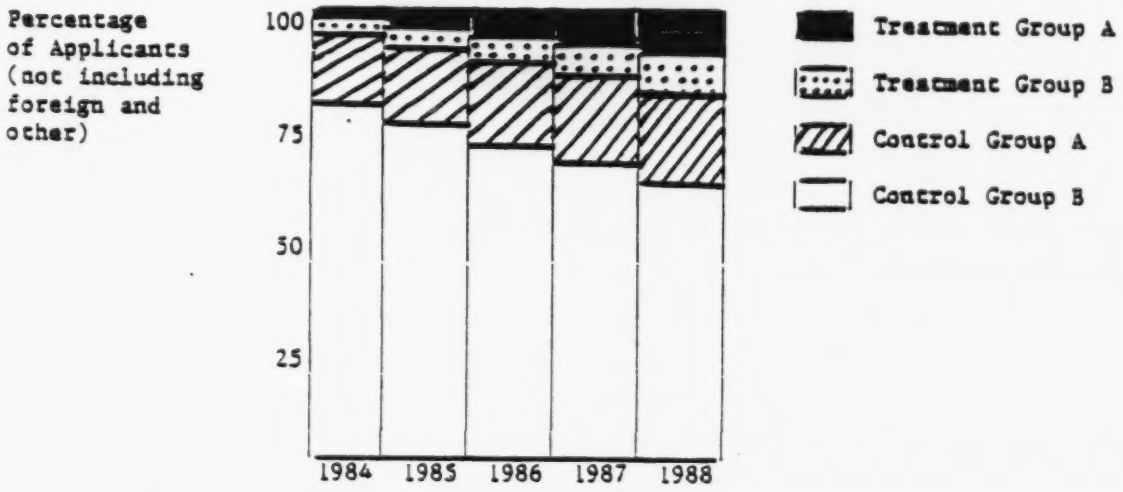
$$\sqrt{\frac{(.0072)(.9928)}{972} + \frac{(.0138)(.9862)}{1,086}} = .0045 \text{ (i.e., 0.45\%)}$$

The actual difference — 1.38% minus 0.72% — is only 1.46 standard deviations which is not significant.

In the same manner, it will be seen that (a) the increase for Treatment Group B (from 1.95% in 1984 to 2.49% in 1985) is less than one standard deviation, while (b) the increase for Treatment Groups A and B combined (from 2.67% in 1984 to 3.87% in 1985) is 1.54 standard deviations. Again, neither of these differences is statistically significant.

With the passage of time, other tests of significance become possible. One is the sign test, in which five successive yearly increases — a 1-in-32 probability — are deemed significant regardless of the size of each yearly increment. Another approach is to divide the data into two groups — pre-grant (1984-85) and post-grant (1986 onward) — and to test the differences between the pre- and post- percentages using the significance test described above.

For descriptive purposes, the data emerging from these comparisons could conveniently be displayed as follows:



These treatment/control group comparisons should be supplemented through direct survey methods: ex post facto time series analysis can only suggest that an effect may be present — it cannot prove it. The purpose of this additional data collection will be to:

(a) Confirm that any differential trends noted between the treatment and control groups were in fact attributable to grant-supported activities.

(b) Explore the possibility that even though no differential trends may have been noted, there may nonetheless exist a significant program effect which transcends geographic boundaries.[1]

The survey should be limited to applicants whose current or permanent address indicates they are from shortage areas, i.e., Treatment Groups A and B and Control Group A. Given the relatively small number of individuals involved (there were 226 such applicants in 1985) and the likelihood that most of those applicants would not have had an opportunity to interact with the Grant Program, a sample is not recommended; the survey should be conducted on a 100% basis.

Analysis of the survey results should focus on the number and percentage of applicants for whom each of the following factors played a role in influencing their decision to apply:

(1) Grant-supported seminars or career fairs

(2) Grant-supported dissemination of information to career advisors or other faculty

(3) Grant-supported media announcements

(4) Interaction with a remote clinical training site

(5) Other activities spawned by the Grant Program

These figures should be compared by residence (Treatment Group A, Treatment Group B, Control Group A) to confirm the presence or absence of a grant-related effect in each of those areas separately, as well as overall. Again, there need not be an area effect for there to be a program effect.

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[1] Shortage area students, located distantly from areas in which recruitment activity was conducted, may nonetheless have been attracted to podiatric medicine through grant-related "ripple" effects, such as word-of-mouth, attendance at regional or national career fairs, etc. The possibility of such effects should not be ignored.

Objective No. 2a (Clinical Training Site as Role Model)

a. Associated Research Hypothesis

"The clinical training sites established under the Grant Program have served as role models in attracting students to the study of podiatric medicine."

b. Proposed Evaluation Strategy

This is a refinement of the hypothesis stated under Objective No. 1. Here, however, the split is different — the focus is not on "shortage areas in which active recruitment supported by the Grant Program took place" but rather on "shortage areas specifically served by the clinical training site."

Unlike Objective No. 1, there are no secondary data on the issue of the training site as role model; data on that issue must be gathered directly from the individuals involved. As in the case of the previous objective, a survey of those individuals is required. This need not be a second, independent survey but rather a matter of adding, to the first survey, an additional question concerning the role, if any, played by the clinical training site in the student's decision to apply, i.e., did it or did it not serve as a role model?

Again, these questions should be asked of all applicants to both grantee and non-grantee institutions. Over time, all persons who enter the podiatric educational process will thus have been interrogated.

c. Analysis Plan

The survey form for applicants (SF-1), used in connection with Objective No. 1, contains a question designed to ascertain whether contact with or awareness of a podiatrist or podiatric clinic influenced the respondent's interest in podiatric medicine. Responses from those applicants whose residences are in areas served by remote site clinics will be examined to determine the

numbers and percentages, within those areas, who cited the remote clinic as a factor in their decision. Responses from other areas will also be examined to investigate the possibility of ripple effects (see footnote, p. 32).

Unlike Objective No. 1, no formal tests of statistical significance are required. The intent here is not to conduct pre-post significance tests but rather to present evidence to support the contention that the clinical training sites indeed provided a "role model" presence, and to estimate the magnitude of that presence.

d. Available Baseline Data

No baseline data bearing on this objective are as yet available.

e. Recommendations for Future Evaluation

The investigation of this hypothesis is a minor extension of that proposed, through the use of survey form SF-1, under Objective No. 1. The recommendations offered in that section apply here as well, i.e., it is recommended that AACPM be authorized (and funded) to

(1) Administer the survey form SF-1 to all applicants
(2) Follow-up as necessary with non-respondents
(3) Track respondents through the educational process

As in the case of Objective No. 1, analysis of these data could be performed by AACPM or alternatively, by an independent evaluation contractor. The analysis itself is straightforward, entailing a determination, each year, of the number and percentage of individuals who interfaced (positively) with the remote site clinic or who know of someone who did. Separate counts should be maintained for persons residing in remote site service areas and those whose residence lies elsewhere (the so-called "ripple" effect).

Objective No. 2b (Clinical Training Site as Inducement to Practice in Podiatric Shortage Areas)

a. Associated Research Hypothesis

"The clinical training sites established under the Grant Program have induced students trained at those sites to ultimately set up practice in the same or other podiatric shortage areas."

b. Proposed Evaluation Strategy

Here, unlike the previous hypotheses, the focus is on the clinical trainee rather than on the newcomer (applicant).

To investigate this hypothesis during the early stages of the Grant Program, only one strategy seems feasible: personal interviews of the clinical trainees themselves, to establish:

(a) where they intend to practice, and

(b) where they would have practiced had they undergone clinical training at another site.

These findings, however, are at best conjectural. There can be no assurance that clinical trainees who express a preference for a given area will necessarily practice there — their eventual practice choice will not be known for several years, particularly if they enter a two- or three-year residency. On the other hand, the proposed effort costs little to perform and is worth doing, even in the early stages of the program. While any positive results (trainees who indicate they intend to practice in the same or other shortage area) must be viewed with caution, negative results (trainees who state that they have absolutely no intention of remaining in that or any other shortage area) are a definite possibility and should be surfaced as early in the program as possible.

c. Analysis Plan

Since many factors influence an individual's choice of practice location, it will be difficult to determine precisely the role of the clinical training site in this decision. Further complicating the analysis is the fact that, since participation in the remote site training program is voluntary, trainees who select this option are likely to have a predisposition toward this type of practice.

To explore these issues, Question 5 on the proposed personal interview form for clinical trainees (PI-1, see Appendix E) is designed to provide information on:

(1) Where the trainee intends ultimately to practice,
(2) What aspects, if any, of the student's remote site experience influenced his or her choice, and
(3) Any additional motivational factors which may be present.

Correlation of this information against the trainees' personal and motivational profile will provide useful insight into the dynamics involved in attracting and retaining students at remote locations. As in the case of Objective No. 2a, no formal tests of statistical significance are required.

d. Available Baseline Data

Preliminary data, using the personal interview form PI-1, were gathered from current trainees to indicate where they intend to practice. This information is strictly of a baseline nature since it is clearly too early to observe the effect of the trainees' clinical experience on their practice location decision; that decision may change.

Of the twelve students interviewed (no more than five per grantee institution), only one had decided where he planned to practice. (This student's situation was somewhat unusual, since he plans to join his father's podiatric practice.) All of the others had given some thought to this question, however. When asked what factors they would consider in choosing a practice location,

the most commonly cited factor was the physical and social environment of the area -- ten of the twelve students stated that this would play a role in their decision. Some commented that they wanted a pleasant location in which they felt comfortable, or that they were looking for a good place to raise children. The factor cited with the second highest frequency (by four students) was the relative need for podiatrists in the area -- none wanted to establish a practice in an area where there was "a podiatrist on every corner." Thus, while they did not talk about officially designated "shortage areas" per se, the overall shortage concept was clearly important to them from an economic standpoint. Other factors noted by the trainees included a desire to be close to family, a desire to serve the underserved (particularly minorities and the poor), the way podiatrists are viewed by the medical community and the scope of activity they are permitted, and a desire to be in an academic or hospital environment. These findings are summarized in Exhibit 8 (below).

EXHIBIT 8. Factors Influencing Student Choice of Practice Site Location

	No. of Mentions*
Physical/social environment	10
Market/need for podiatrists	4
Proximity to family/friends	3
Altruism/serve the needy	2
Scope of permitted podiatry practice	2
Academic environment	1
Hospital environment	1
Professional/educational opportunities	0

*Students were permitted to cite more than one factor.

In addition to these factors, students were asked explicitly about their clinical experience and its influence on their choice of practice location. Eleven students said that the experience had an impact (seven positive, four negative); only one said it had no effect. In general, trainees who said they liked the physical setting reported a positive influence (i.e., stated that the clinical experience made them more likely to consider practicing in a shortage area); those who disliked the setting reported a negative influence. In particular, two Iowa students said they had originally wanted to practice in a

rural area and that their experience reinforced that objective; three Pennsylvania students said they would not originally have considered St. Louis as a practice site but that it was now on their list of possible locations; and two students (both from Iowa) said that the success of the rural clinics in attracting patients had the positive effect of demonstrating the feasibility of setting up a rural practice.

The students who had a negative reaction to the remote site noted several problems. The students at the CCPM clinic in East Los Angeles were not interested in staying in that area for two primary reasons: the unsafe nature of the neighborhood and the inability of the low income patients to support a practice. Podiatric students feel considerable pressure from the loan debt they amass during their training, and the practice they establish must enable them to repay this debt. One Iowa student did not like the rural, small town setting of the clinic and would not consider returning there.

To summarize, the effect of the clinical experience on future practice location decisions varied from site to site. In rural Iowa, although the experience did not change anyone's mind, it did reinforce these students' interest in a rural location and demonstrated that it was possible to make a success of such a practice. The number of students interviewed in Iowa was five.

In contrast, none of the students in East Los Angeles (n=3) was planning to return to that area to practice. While they recognized the need for services in the area, and said that they might be interested in spending "some" time in an inner-city low-income clinic, they also felt they could not afford to practice exclusively in such an area.

The experience of students in St. Louis (n=4) was quite different. All said that they had never considered practicing in St. Louis prior to their clinical experience, but that they had found the city to be pleasant and interesting, with a genuine need for podiatrists.

While the numbers of students interviewed is small, these results suggest that different inducements may be needed for different types of shortage areas.

For an area like St. Louis, which exhibits the income potential and urban-suburban characteristics attractive to many practitioners, brief exposure may be sufficient to arouse interest. For a rural area, however, the issue the program needs to address is the feasibility of establishing a practice. Finally, in an area like East Los Angeles, clinical experience may not be the key to attracting trainees and practitioners -- recruitment of students explicitly from the area, coupled with some form of economic incentive, may also be crucial.

A point made by several respondents was that the effect of the remote site experience could be blunted by residency experience. They stressed that the location of a person's residency may have more impact than a student's clinical rotation. Therefore, developing residencies in remote areas is a very important consideration in attracting students to shortage areas.

e. Recommendations for Future Evaluation

Administering the personal interview form PI-1 to clinical trainees is a relatively minor cost item and is recommended; it will, however, require OMB approval. Again, analysis of the results could be performed either by AACPM or an independent evaluation contractor.

Analysis should follow the form suggested in the preceding section on Baseline Data.

Objective No. 3 (Provision of Primary Foot Care to Underserved Populations)

a. Associated Research Hypothesis

"The Grant Program has provided needed primary foot care, not otherwise available, to a variety of underserved populations."

b. Proposed Evaluation Strategy

The preferred method for addressing this hypothesis is through a direct survey of the patients treated at the remote clinical training sites. Survey form SF-2 (Appendix B) was developed to meet this need. The issues addressed in the form include:

(1) The patient's medical history and prior foot care treatment (if any)

(2) The type of treatment received at the remote site clinic

(3) The patient's degree of satisfaction with

(a) Any prior foot care received
(b) The treatment received at the remote site clinic

(4) The patient's perceptions of podiatric medicine before and after treatment at the remote site clinic

(5) The patient's demographic characteristics (age, race, sex)

This information can be routinely gathered at the time of patient intake and updated as the treatment proceeds. While a survey of this nature necessarily covers only the treated population, i.e., says nothing about the rest of the community, it will nonetheless suffice to produce the information needed to either support or refute the stated hypothesis.

c. Analysis Plan

Since the remote site clinics are located in shortage areas, it may safely be assumed that the hypothesis is true, that the clinics are providing foot care to populations that are underserved. The issue, however, is the extent to which this is taking place. The proposed patient survey form (SF-2) is designed to address that issue, i.e., to produce estimates of:

(1) the number of patients with chronic foot disorders or acute problems in advanced stages who had not previously sought treatment.

(2) the number of patients who had previously received foot care at other locations and were dissatisfied.

(3) the number of patients who cited each of the following factors as a reason for their dissatisfaction with prior foot care:

-- Medical reasons (condition did not improve or worsened)
-- Financial reasons (cost too much)
-- Personal reasons (long waits or treated rudely)
-- Convenience (too long a trip or hard to get to)

(4) The number of patients whose demographic characteristics indicate they might be "underserved."

Examination of this hypothesis requires that the number and percentage of patients in each of these categories be tallied and tracked over time. Since the data deal with a self-selected group (those who have voluntarily chosen to visit the remote site clinic), pre-post comparisons using tests of statistical significance are of no relevance -- they will almost certainly yield "positive" results. On the other hand, it will be illuminating simply to examine the numbers involved: if a large percentage of those visiting the clinic had not previously received needed foot care or had received care with which they were dissatisfied, the stated hypothesis (and objective) may justifiably be deemed to have been met.

d. Available Baseline Data

Completed forms SF-2 were received from a sample of nine patients. Since no attempt was made to select the patients scientifically, the resulting findings are of no significance from a baseline standpoint; the sole intent was to test the feasibility and suitability of the questionnaire.

A brief summary of these pretest results is presented below:

(1) Prior treatment history

- Four of the patients had never seen a foot care specialist before. All were white, one was elderly (74 years old).

- Of the remaining five patients, three had previously seen medical doctors for treatment of the foot but not within the past three months. All were dissatisfied with the treatment they had received. One cited dissatisfaction for a combination of medical reasons and inconvenience; one cited medical reasons alone; the third cited poor personal treatment as a factor.

- The two remaining patients had both seen podiatrists within three months prior to visiting the remote site clinic. Both were satisfied with the prior treatment they had received.

(2) Perceptions concerning treatment received at the remote site clinic

- Those with no prior foot care were without exception "very satisfied" with the treatment received at the remote site clinic, from all four standpoints: medical, financial, personal, and convenience.

- The two groups who previously received foot care from an M.D. or a podiatrist were, by and large, "very satisfied"; there were only two minor exceptions. Exhibit 9 (next page) shows the responses of all three groups.

EXHIBIT 9. Patient Perceptions Concerning Treatment Received at Remote Site Clinic

Patient Group	Rating Factor	Patient Perception			
		Very Satisfied	Moderately Satisfied	Dissatisfied	No Opinion
Those with no prior foot care (n=4)	Medical	4			
	Financial	4			
	Personal	4			
	Convenience	4			
Those who previously visited an M.D. (n=3)	Medical	3			
	Financial	2			1
	Personal	3			
	Convenience	3			
Those who previously visited a podiatrist (n=2)	Medical	1	1		
	Financial	2			
	Personal	2			
	Convenience	2			

e. Recommendations for Future Evaluation

The survey form SF-2 could be administered and its results analyzed either by AACPM or an independent evaluation contractor. Because of the numbers involved, the form will require OMB approval. It will also require grantee cooperation, both in providing access to patients and in providing medical histories and treatment information.

It is recommended that analysis of the data follow the form suggested in the preceding section on Baseline Data. Deeper analyses, based on type of patient foot disorder and demographic characteristics, should also be performed.

For small clinics (those with less than 100 new patients per year), it is recommended that all new patients be surveyed. For large clinics (those with over 100 new patients per year), a sample of 100, distributed randomly throughout the year, should suffice.[1]

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[1] A sample of 100 produces a standard error of at most 5%, considered adequate for the purpose of this evaluation.

Objective No. 4 (Expansion of Existing Training Capacity)

a. Associated Research Hypothesis

"The clinical training sites established under the Grant Program have expanded the existing training capacity of the colleges of podiatric medicine."

b. Proposed Evaluation Strategy

One of the data elements routinely reported by the colleges to the American Association of Colleges of Podiatric Medicine is the annual number of clinical encounters between patients and students. If, following implementation of the Grant Program, that number were to remain basically unchanged, one might argue that the program had merely reallocated, rather than expanded, the colleges' existing training capacity. If, on the other hand, the number of student-patient encounters were to increase, the magnitude of that increase is a measure of the success of the program in meeting the stated objective. To implement this strategy, it is proposed that the three grantee institutions divide their annual clinical reports into two sections: one for the clinical training sites specifically implemented under the Grant Program and one for all other clinical sites combined.

As the program proceeds, there may be a demand for additional training sites in other locations; this has already happened in Iowa. To the extent that this sort of development takes place, the resulting expansion of clinical capacity — even though not explicitly funded by the Grant Program — should count in support of the stated hypothesis.

c. Analysis Plan

For each grantee, the number of patient encounters (1) prior to the grant and (2) following implementation of the remote site clinics should be compared. Longitudinal comparisons should be performed using pre- and post-grant data; cross-sectional comparisons should be made of the numbers of student-patient

encounters at the remote clinical training sites versus all other clinical sites combined. The data display will have the following appearance:

	Number of patient encounters per year			
	Pre-grant	Post-Grant		
		Year 1	Year 2	Year 3
Remote sites				
All other sites, combined				

d. Available Baseline Data

During the field visits, informal discussions with trainees, clinical supervisors, and other program officials disclosed certain qualitative differences between the clinical experiences of students at the remote sites and at other clinical sites of the same institution. The students at the remote sites stated that it was their impression that they are seeing more patients, taking more responsibility for patients, and encountering a broader range of experience than students at the other clinics. In at least two clinics, students are being exposed to medical procedures beyond podiatric care -- serving in emergency rooms and working with physicians, anesthesiologists and others in hospital settings. Further, students at four of the clinics are gaining experience with the administrative tasks associated with a practice. As a result of these factors, all but two of those interviewed said that the remote site clinics were getting an excellent reputation among students and they expected more to apply in the future because of the quality of the clinical experience.

These observations were strictly informal. At a more formal level, Exhibit 10 shows selected data on clinical encounters extracted from the colleges' 1984-85 Annual Statistical Reports to AACPM. Unfortunately, the information reported is spotty: of the three grantee institutions, only one (Pennsylvania) reported the number of patient-student encounters that year.

EXHIBIT 10. Clinic Survey Report
1984-85

	CCPM	CPM&S	SCPM	NYCPM	OCPM	PCPM
Number of off-campus locations	40	20	32	67	19	20
Number of students FTE	119.4	NA	52.5	257	248.5	39
Number of students enrolled in clinical programs	92	NA	136	125	274	216
Number of patient visits/year	NA	NA	NA	NA	26,566	57,672
Number of patient-student contacts/year	NA	NA	193,950	NA	64,902	57,672
Number of new patients	NA	1,412	59,565	NA	3,635	NA

CCPM: California College of Podiatric Medicine
CPM&S: College of Podiatric Medicine and Surgery (Iowa)
SCPM: Scholl College of Podiatric Medicine (Illinois)
NYCPM: New York College of Podiatric Medicine
OCPM: Ohio College of Podiatric Medicine
PCPM: Pennsylvania College of Podiatric Medicine

SOURCE: Annual Statistical Reports submitted to the American Association of Colleges of Podiatric Medicine.

e. Recommendations for Future Evaluation

This portion of the evaluation can be accomplished at essentially no cost. AACPM will, if desired, instruct the colleges to disaggregate their statistics on clinical encounters by remote sites versus all other sites combined. Examination of this information will permit the desired assessment as to whether the Grant Program has expanded the existing training capacity of the colleges or merely redistributed it.

Objective No. 5 (Increased Public Awareness)

a. Associated Research Hypothesis

"By their presence, the clinical training sites established under the Grant Program have increased the awareness of the public of the role and importance of podiatric medicine in disease prevention and health promotion."

b. Proposed Evaluation Strategy

Ideally, this hypothesis should be addressed through a community-wide survey. The cost of such a survey, however, far outweighs the importance of this objective within the overall evaluation context.

A low-cost patient survey, as suggested in connection with Objective No. 3, is recommended. This would not entail a separate survey but is rather a matter of adding a few additional questions to the survey form (SF-2) developed under the earlier objective. These added questions would focus on the patient's awareness and perception of podiatric medicine before and after visiting the clinical training site.

The issue of raised consciousness among the other health professions and designated social and health agencies can be handled in either of two ways: through a scientific opinion survey of the respective communities involved or through anecdotal evidence gathered from interviews with individuals and groups known to have interacted with the clinic's patients and/or staff. The anecdotal approach is cheaper but would be meaningless if those interviewed had a predisposition in favor of podiatric medicine prior to implementation of the training site. The point of investigating this hypothesis is to identify converts, not historic allies. For that purpose, a community-wide survey may be necessary; however, the benefits of such a survey are considered inadequate to justify the cost. On the other hand, a survey of high school and college career advisors and faculty -- a relatively low-cost item -- is recommended. The survey form proposed for this purpose, SF-3, is shown in Appendix C.

c. Analysis Plan

Two surveys are proposed: a patient survey and a survey of selected faculty and career advisors.

The patient survey form (SF-2) contains a section which addresses the patient's awareness of, and attitude toward, podiatric medicine before and after visiting the remote site clinic. This information will be used to estimate the number and percentage of patients whose knowledge and level of awareness of podiatric medicine increased as a result of their interaction with the clinic.

The survey form for faculty and career advisors (SF-3) seeks to address tha awareness levels and attitudes of those in the community who are in a position to affect students' career choices. Analysis of the data obtained through this form will indicate:

(1) the number of such individuals who were previously unaware of the clinic

(2) the number whose attitudes toward podiatric medicine became more positive as a result of the clinic

(3) any perceived changes in student attitudes toward podiatric medicine since the institution of the clinic.

d. Available Baseline Data

As indicated under Objective No. 3, the patient survey form (SF-2) was administered, as a pretest, to a sample of nine patients. The findings of that portion of the questionnaire which deals with patient knowledge and awareness are briefly summarized below:

- Three of the four persons with no prior foot care stated that their opinion of podiatric medicine had "improved considerably" as a result of their remote site clinical experience. The fourth failed to complete this item.

- Two of the three persons who had previously received foot care from an M.D. stated that their opinion of podiatric medicine had "improved slightly" (as a result of their clinical experience); the third stated it had "improved considerably." Two of the three had no prior awareness of podiatric medicine as a special form of medical practice; the third was aware of it but was neutral concerning its benefits.

- Both of the persons who had previously received foot care from a podiatrist stated that their opinion of podiatric medicine, positive before they visited the clinic, had "improved considerably." Exhibit 11 shows the responses of all three groups.

EXHIBIT 11. Patient Awareness of Podiatric Medicine Before and After Visiting Remote Site Clinic

Patient Group	Pre-Visit Awareness	Post-Visit Awareness				
		Improved Considerably	Improved Slightly	No Change	Went Down	No Response
Those with no prior foot care (n=4)	Unaware	1				1
	Neutral	1				
	Positive	1				
	Negative					
Those who previously visited an M.D. (n=3)	Unaware	1	1			
	Neutral		1			
	Positive					
	Negative					
Those who previously visited a podiatrist (n=2)	Unaware					
	Neutral					
	Positive	2				
	Negative					

Since the patient sample was not selected scientifically, these findings -- apart from the small sample size -- serve no evaluative purpose. If similar findings were to emerge, however, from a larger probability sample, one could justifiably conclude that Objective No. 5 had been met -- at least for patients of the clinic.

No baseline data were gathered from faculty and career advisors (form SF-3).

e. Recommendations for Future Evaluation

Survey form SF-2: Recommendations for implementation of this form are identical to those outlined under Objective No. 3.

Survey form SF-3: Recommendations are similar to those for SF-2. The form could be administered, with grantee cooperation, either by AACPM or an independent evaluation contractor. Either way, OMB approval will be needed. The form should be administered once, to all career advisors and influential faculty in areas affected by the Grant Program, then updated as new advisors and faculty are appointed.[1]

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[1] Because of its simplicity, the form should experience a high response rate. If it does not, intensive telephone follow-up (in an effort to boost the response rate) is not recommended. The goal of this effort is to estimate the number of individuals influenced by the clinic, not necessarily their percentage; since non-respondents are less likely than respondents to have been influenced, repeated follow-up may refine the estimated percentage of such individuals but is not likely to increase their number.

Objective No. 6 (Inducement to Practitioners)

a. Associated Research Hypothesis

"Practitioners who might otherwise be reluctant to practice at a remote clinical site are encouraged to do so by the formal link which exists between those sites and the podiatric educational network."

b. Proposed Evaluation Strategy

It is proposed that this hypothesis be explored through structured interviews with the clinical staff assigned to each site. Each staff member will be asked to rate, on a three-point Likert scale ("Critically Important", "Important but Not Critical", "Not Important at All"), those factors which might have caused them to seek and/or accept that particular assignment. "Linkage with the podiatric educational network" is one of the factors they will be asked to rate. Other factors include:

-- Desire to be near family and friends
-- Preference for physical environment and/or climate
-- Preference for local culture, affinity for local population, etc.
-- Preference for professional facilities, resources, and colleagues
-- Desire to serve underserved population

The interview guide designed for this purpose, PI-2, is shown in Appendix F.

c. Analysis Plan

The proposed interview guide provides a basis for judging the relative importance of the linkage with the academic community in the clinical supervisor's decision to serve at the remote site. The number and percentage of supervisors who cite "preference for linkage with the podiatric educational network" as being "of critical importance" will be compared with the number and percentage of other responses. Similar analysis will be performed for those who cited the academic connection as "important but not critical."

Since this information will be gathered through personal interviews, any resulting anecdotal information is expected to enrich the evaluation staff's understanding of why clinical supervisors chose to serve at the remote site clinics.

d. Available Baseline Data

There are important differences among the three grantee institutions in this regard. The remote site clinics affiliated with the Iowa and California colleges were specifically established for the Grant Program; the Pennsylvania college, on the other hand, arranged with previously established facilities to operate the remote site clinics. Thus, Iowa and California hired supervisors for their clinics, while clinical supervisors were already on hand at the Pennsylvania clinics. Therefore, this hypothesis, as stated, does not apply to the staff at the Pennsylvania clinics.

The three clinical supervisors in Iowa and the two in East Los Angeles were interviewed to explore the factors that were important in their decision to serve. For four of the five, the linkage with the college and the opportunity to teach were critical factors. Both of the supervisors in East Los Angeles were already doing part-time or voluntary ceaching with the program in Los Angeles; both were drawn to the opportunity to design a clinical program for students as they thought it should be. Since they were already in Los Angeles, relocation to the remote site was not an issue.

In Iowa, all three supervisors were brought in from other areas for the program. Two of the three had rural practices at the time; the other had just completed his residency and had family in Iowa. The linkage with the college and the opportunity to teach was a very important consideration for the former; proximity to family and preference for the area near the clinic were more important for the latter.

A brief summary of these interview findings is shown in Exhibit 12 (next page).

EXHIBIT 12. Factors that Attracted Supervisors to Remote Site Clinics

	No. of Mentions as "Critical"	No. of Mentions as "Important But Not Critical"
Linkage with college	4	1
Preference for remote site region	1	1
Desire to serve underserved		4

e. Recommendations for Future Evaluation

Recommendations for implementing the evaluation strategy for this objective follow those outlined for the clinical trainee form (PI-1) under Objective No. 2b.

Objective No. 7 (Entry Point to Health Care Delivery System)

a. Associated Research Hypothesis

"The care received at the remote clinical training sites provides an entry point to the health care delivery system for persons suffering from systemic disorders with or without pedal manifestations."[1]

b. Proposed Evaluation Strategy

This hypothesis, as in the case of Objectives No. 3 (Provision of Primary Foot Care) and No. 5 (Increased Public Awareness), is best addressed through a patient survey. Of interest are:

(a) The number and percentage of patients with diabetes and other systemic disorders who were not under the active care of an allopathic or osteopathic physician prior to seeking podiatric medical treatment at the clinical training site, and

(b) The number and percentage who began to receive such care as a direct consequence of their encounter with the clinical training site.

Again, this is not a separate survey but rather a matter of adding several additional data elements to the patient survey form SF-2 proposed under Objectives No. 3 and 5.

c. Analysis Plan

To investigate this hypothesis, the proposed patient survey form has been expanded to include:

---

[1] In the initial Statement of Objectives developed at the first Advisory Panel meeting (see Exhibit 5), this objective alluded to "systemic disorders with pedal manifestations" (emphasis added). The Advisory Panel subsequently decided that this wording was unnecessarily restrictive and recommended that the phrase read "with or without."

(1) Information on the patient's clinical diagnoses and treatment received at the remote site clinic.

(2) A check-off item indicating that the patient "was referred to a non-podiatric physician for treatment of a condition of which I was previously unaware."

This information, developed over the years, will provide a perspective on the medical gains to the patient community resulting from their exposure to the clinical training sites. No formal test of statistical significance is required -- merely an examination of the numbers involved.

d. Available Baseline Data

Of the nine patients surveyed, only one (the 74-year old) was reported to have a systemic disorder — arteriosclerosis. He was not referred to a non-podiatric physician as a result of his visit to the clinic.

e. Recommendations for Future Evaluation

Recommendations for implementing the evaluation strategy for this objective follow those outlined for survey form SF-2 under Objective No. 3.

Objective No. 8 (Alleviation of the Geographic Maldistribution of Podiatrists)

a. Associated Research Hypothesis

"The Grant Program has resulted in greater numbers of podiatrists who practice in designated podiatric shortage areas."

b. Proposed Evaluation Strategy

As in the case of Objective No. 1, the difficulty with this hypothesis lies in the difficulty in proving causality. As before, a purely time series approach -- comparing the "before" and "after" numbers of podiatrists who practice in podiatric shortage areas -- can be misleading. Too many other variables are involved for an uncontrolled comparison of this nature to be meaningful. Unless the individuals who have chosen to practice in shortage areas are themselves contacted and asked to account for (a) the steps that led to their choice of podiatric medicine as a career, and (b) the basis for their choice of that particular practice location, pre-post comparisons are useless for judging impact.

On the other hand, there is merit in knowing the numbers, i.e., the percentage of podiatrists practicing in shortage areas. These figures can be obtained by applying to the membership files of the American Podiatric Medical Association (APMA), the Bureau of Health Professions' list of designated podiatric shortage areas (Federal Register, May 8, 1981). As the number of podiatrists and/or the associated podiatrist-population ratios in designated shortage areas continues to increase, the stated hypothesis, although far from proven, takes on greater credibility.

To prove the hypothesis, however, it will be necessary to demonstrate that significant numbers of podiatrists, practicing at the time of the evaluation in designated podiatric shortage areas, were either induced to study podiatric medicine, or to practice in a shortage area, through activities which can be traced, directly or indirectly, to the Grant Program. Such an investigation will of course not be possible until well into the program; however, it is not an inherently costly item and should be performed. The target group should be

limited to podiatrists who have had an opportunity to interact as students with the Grant Program (i.e., recent graduates) and who are currently practicing in shortage areas.

c. Analysis Plan

As in the case of Objective No. 1, the analysis required to address this hypothesis contains both a time series and a survey component.

For the time series component, data from APMA files can be arrayed to show changes in the number of podiatrists practicing in shortage and non-shortage areas over the years. Both the absolute number and the number per 100,000 population should be shown.

The survey component, possible several years in the future, should be directed toward recent graduates practicing in shortage areas. Survey form SF-4, shown in Appendix D, was designed for this purpose. The intent of this survey is to establish the dynamics by which individuals practicing in shortage area locations arrived at their choice, and in particular whether their choice was affected by their involvement (or that of others they know) with the remote site program. In particular, information will be gathered which will permit estimates to be derived of:

(1) the number and percentage of recent graduates practicing in shortage areas who decided on their practice location during their clinical years and who participated in a remote site clinical training program.

(2) the number and percentage of recent graduates practicing in shortage areas who decided on their practice location during their clinical years and who did not participate in a remote site clinical training program.

(3) the number and percentage of recent graduates who cited their remote site clinical experience as an influence in their choice of practice location.

As in the case of Objective No. 1, the survey also addresses the factors that sparked the individual's initial interest in podiatric medicine, and whether those factors were related to the Grant Program. The form obviously cannot be used until the first group of trainees who rotated through the remote sites have begun to set up their practices. Also, as in the case of the other survey forms, it requires contractual authorization to proceed, OMB clearance, and the availability of future funding.

d. Available Baseline Data

No baseline data bearing on this objective are as yet available. Time series data can be generated by APMA but require an effort well beyond the scope of this project. Survey data cannot be generated until 1987 at the earliest; because of the possibility of two- and three-year residencies for students only now graduating, 1988 would be preferable.

e. Recommendations for Future Evaluation

As stated earlier, this is strictly a long-term objective. However, it is strongly relevant to the primary purpose for which the Podiatric Medicine Training Grant Program was established, and should be pursued.

Modest funding (several thousand dollars at most) would be needed to support the American Podiatric Medical Association's pursuit of time series data pertaining to practice location (shortage vs. non-shortage area). The additional funding needed to support a survey of graduates practicing in shortage areas would not be much greater. This entire effort can be accomplished for under ten thousand dollars.

As in the case of the prior objectives, pursuit of the survey component will require OMB approval and can be pursued either by AACPM or an independent evaluation contractor. Whoever handles the survey should be assigned the responsibility for coordinating the time series component with APMA.

Objective No. 9 (Reduced Morbidity and Disability)

a. Associated Research Hypothesis

"The Grant Program has resulted in reduced morbidity and disability, involving the foot or foot-related systemic disorders, among the populations served."

b. Proposed Evaluation Strategy

The thesis underlying this objective is that proper foot care, applied in a timely manner, can reduce amputations and improve mobility among the chronically ill. To a certain extent, this thesis is explored through the patient survey proposed under Objectives No. 3, 5, and 7. However, that survey is primarily a short-term look at who is being treated (Objective No. 3), their perceptions concerning podiatric medicine (Objective No. 5), and referral patterns resulting from their treatment at the clinic (Objective No. 7). A survey limited to current patients fails to capture the long-term picture -- effects that may not be felt for some time.

There are two ways of addressing this issue. The first is to compare selected foot-related morbidity statistics for hospitals in the area served by the clinical training site (particularly those with diabetes clinics) with a matched sample of hospitals in other areas. Data for performing this comparison could be obtained from, among others, the Veterans Administration and the Commission on Professional and Hospital Activities (CPHA). Unfortunately, there is no way of linking those data unambiguously with patients nor is it likely that the impact of the clinic will loom sufficiently large in the overall picture to create a difference that would be recognized as statistically significant.

The other way of addressing the issue is through follow-up of former patients. This approach leads primarily to anecdotal information (individual case histories), with no control group and therefore no basis for judging what might have happened had the individual not sought treatment at the clinical training site.

Following extended consideration, it was recommended that this objective and its associated hypothesis be eliminated from the study. This recommendation was made for the following reasons:

(1) Because of difficulty in obtaining publicly available data which can be linked unambiguously with patient residence, the usual sources of morbidity and disability statistics (National Center for Health Statistics, Centers for Disease Control, CPHA, etc.) are of little value in proving that the hoped-for impact has taken place. Moreover, given the aggregate nature of the data, a long wait may be forthcoming before the impact (if one is present) will be sufficiently large to be statistically significant.

(2) Since it is assumed that podiatric medicine is effective in reducing morbidity and disability, then to the extent that the Grant Program has succeeded in providing foot care to populations that would otherwise be underserved (Objective No. 3), the program is by definition contributing to reduced morbidity and disability.

5. Conclusions

Although the primary purpose of this project was to develop an evaluation design for future evaluations, interim observations concerning program performance may be in order.

The data gathered during the course of this study serve at most a baseline or pretest purpose. They are inadequate to permit judgment as to whether or not the program has been accomplishing its primary objectives of:

-- recruiting and retaining students who reside in areas having shortages of podiatric manpower (Objective No. 1)

-- serving as role models in attracting students to the study of podiatric medicine (Objective No. 2a)

-- serving as "magnets" for students to ultimately set up practice at or near the remote site or other underserved area (Objective No. 2b)

As noted, the attainment of these goals will not be evident until a formal evaluation, using the products of this study, has been performed. There is evidence, however, from the field visits conducted under this study that the program has made a useful start with respect to some of the other, secondary objectives: students at the remote sites were reportedly "seeing more patients, taking more responsibility for patients, and encountering a broader range of experience than students at the other clinics" (p. 45). While these reports are anecdotal and one-sided (similar evidence was not solicited from students at the non-remote sites), such reports -- received from the students, not their supervisors -- could easily have gone in the other direction. It is informative that they did not.

Equally informative are the students' reactions to their remote site experience in terms of preferred practice locations. Of the eleven students with opinions (p. 37), seven were positive (inclined to consider practicing in a shortage area), four were negative. While this slight positive edge, based on limited evidence, is not particularly impressive, what is impressive

are the individual comments (pp. 37-38): the two Iowa students who had "originally wanted to practice in a rural area", whose clinical experience reinforced that objective; the three Pennsylvania students who "would not have originally considered St. Louis as a practice site" for whom such a site was now a definite possibility; and the three Iowa students who stated that "the success of the rural clinics in attracting patients had the positive effect of demonstrating the feasibility of setting up a rural practice."

These anecdotal reports do not constitute an evaluation. The existence of a payoff for this program lies ultimately in:

a. The numbers of students from shortage areas attracted to the study of podiatric medicine who would not have studied it otherwise (Objectives No. 1 and 2a),

b. The numbers of students, regardless of origin, who were attracted to set up practice in shortage areas (Objective No. 2b),

c. The volume of foot care provided to underserved populations in need of such care (Objective No. 3),

as well as in the expanded training capacity (Objective No. 4), increased public awareness (Objective No. 5), and other objectives listed in Exhibit 5.

Is it possible, in the near future, to evaluate the attainment of those objectives? This study concludes that it is.

6. Recommendations

At a time when Federal programs are being cut, efforts to evaluate those programs, while more important than ever, must similarly be kept within reason. The goal, therefore, of this project has been to propose evaluation activities capable of producing useful insights at relatively low cost. Activities which have surface merit but whose cost outweighs any marginal benefits derived have been excluded. The activities described under Objectives 1 through 8 can each be conducted for under ten thousand dollars; some can be conducted for considerably less than that amount. It is recommended that these activities be authorized and funded.

Exhibit 12 summarizes the evaluation activities proposed for each objective. For Objectives No. 1 and 8, both primary and secondary data collection methods are proposed; for the other objectives, either primary or secondary data collection (but not both) is proposed.

Exhibit 13 shows the intended target group, number surveyed, timing, and method of administration for each proposed primary data collection activity. As noted, these activities could be conducted either by AACPM or an independent evaluation contractor. All will require OMB approval.

Finally, it should be noted that not all primary data collection need be conducted simultaneously. These activities could (and should) be phased as shown in Exhibit 13.

EXHIBIT 13. Proposed Evaluation Activities, by Objective

OBJECTIVE	PRIMARY DATA COLLECTION						SECONDARY DATA COLLECTION
	SURVEY FORM				PERSONAL INTERVIEW		
	SF-1	SF-2	SF-3	SF-4	PI-1	PI-2	
1. Recruitment and retention of shortage area students	X						Number of applications received from students in designated treatment and control group areas (AACPM)
2a. Clinical training site as role model	X						
2b. Clinical training site as inducement to practice in podiatric shortage areas					X		
3. Provision of primary foot care to underserved populations		X					
4. Expansion of existing training capacity							Number of student-patient encounters at remote site clinics versus all other clinical sites combined (AACPM)
5. Increased public awareness		X	X				
6. Inducement to practitioners						X	
7. Entry point to health care delivery system		X					
8. Alleviation of the geographic maldistribution of podiatrists				X			Number of podiatrists practicing in podiatric shortage and non-shortage areas (APMA)

NOTE: Primary data collection can be performed either by AACPM or an independent evaluation contractor. Secondary data collection can be performed by AACPM or APMA as shown.

EXHIBIT 14. Summary of Proposed Primary Data Collection Activities

Form	Target Group	Number Surveyed	Timing	Method of Administration
SF-1	Applicants from shortage areas	All	Continuous - On receipt of application	Mail survey
SF-2	Patients at remote site clinics	All new patients (maximum of 100 per year)	Continuous - At 1st contact with clinic and after 3rd visit	At discretion of clinic: - Interview in examining room by nurse or assistant OR - Self-administered
SF-3	College faculty and college/high school career advisors in areas served by remote site clinics	All in a position to affect student career choices	At end of 1st year of clinic operation	Mail survey, names and addresses provided by colleges
SF-4	Recent graduates practicing in shortage areas	All	Annually, after program has been in operation four years	Mail survey
PI-1	Clinical trainees at remote sites	All	During last month of clinical experience	Personal interview, at clinic or on campus
PI-2	Clinical supervisors at remote sites	All	Immaterial	Personal interview, at clinic or on campus

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APPENDIX A. APPLICANT SURVEY FORM (SF-1)

FORM SF-1

PODIATRIC MEDICINE SURVEY

Thank you for your interest in pursuing podiatric medicine as a career. It would be most helpful to us if you would indicate below which, if any, of the following factors are true of your own personal experience.

PLEASE CHECK AS MANY STATEMENTS AS ARE APPROPRIATE.

[ ] I have a friend or family member who is (or was) a podiatrist.

[ ] I have a friend or family member who is currently studying podiatric medicine.

[ ] I attended a professional seminar or career fair at which podiatric medicine was discussed. ——> PLEASE INDICATE, TO THE BEST OF YOUR RECOLLECTION, THE LOCATION AND APPROXIMATE DATE:

Location: _____
Sponsor: _____
Approximate date: _____
Description: _____

Was a podiatrist or other representative of the podiatric medical profession present on that occasion?

[ ] Yes ——> Name or affiliation (if known)_____
[ ] Not to my knowledge.

[ ] I received information from a career advisor or other member of faculty which stimulated my interest in podiatric medicine.——> PLEASE INDICATE THE SCHOOL OR UNIVERSITY AT WHICH THIS TOOK PLACE AND, IF POSSIBLE, IDENTIFY THE INDIVIDUAL BY EITHER NAME OR TITLE:

School or university: _____
Advisor or other faculty member: _____

[ ] I received information concerning podiatric medicine through one or more of the following (PLEASE DESCRIBE BRIEFLY, GIVE APPROXIMATE DATE, PUBLICATION IF RELEVANT):

[ ] Direct mail _____
[ ] Public announcement on radio or TV _____
[ ] Newspaper advertisement _____
[ ] Newspaper or magazine article _____

[ ] Either I or someone I know received helpful diagnostic or therapeutic care from one or more podiatrists. ——> PLEASE INDICATE WHERE:

City/state: _____

If all or a portion of this care was received at a podiatric clinic (as opposed to solo or group practice), please identify the clinic and/or its location:

_____

[ ] Other reason for interest in podiatric medicine (please specify below):

_____

_____

BEST COPY AVAILABLE

APPENDIX B. PATIENT SURVEY FORM (SF-2)

FORM SF-2

PATIENT SURVEY

DEAR PATIENT: To assist us in providing quality service, we are interested in learning about the circumstances which brought you to this center. We are also interested in learning how you feel about the treatment you received. Would you please take the time to complete and return this questionnaire, as indicated below?

PART I. PRIOR TREATMENT HISTORY (to be completed on the occasion of your first visit, or as soon thereafter as possible)

1. When was the last time you saw a podiatrist/foot doctor or other physician for care of your feet?

[ ] Never [THANK YOU FOR YOUR TIME. PLEASE RETURN QUESTIONNAIRE.]
[ ] Over five years ago
[ ] Over a year ago
[ ] At least six months ago but within the past year
[ ] Within the past six months
[ ] Within the past three months
[ ] Within the past month

2. Where did this take place?

City/state: _____

Type of physician: [PLEASE CHECK ONE]
[ ] Medical doctor (MD)
[ ] Osteopath (DO)
[ ] Podiatrist (DPM)

Clinical setting: [PLEASE CHECK ONE]
[ ] Doctor's office
[ ] Hospital outpatient department or emergency room
[ ] Clinic or other outpatient setting other than doctor's office

3. What was your foot care problem at the time? _____

Please describe the treatment you received _____

_____

4. Were you satisfied with the treatment you received?

[ ] YES [THANK YOU FOR YOUR TIME. PLEASE RETURN QUESTIONNAIRE.]

[ ] NO ——> Why were you dissatisfied? [PLEASE CHECK AS MANY OF THE FOLLOWING REASONS AS ARE APPLICABLE.]

[ ] Medical reasons: My condition did not improve (or got worse).

[ ] Financial reasons: It cost too much.

[ ] Inconvenience: It was too long a trip or too inconvenient to get to.

[ ] Personal treatment: I suffered long waits or other discourtesies.

[ ] Other (specify): _____

_____

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PART II. TREATMENT RECEIVED (to be completed on the occasion of your third visit or upon completion of treatment, which comes sooner)

1. PLEASE RATE THE TREATMENT YOU RECEIVED AT THIS CENTER: [PLEASE CHECK ONE BOX IN EACH OF SECTIONS A, B, C, AND D.]

A. From a medical standpoint, I was:

[ ] Very satisfied. My condition either improved or I was referred to a non-podiatric physician for treatment of a condition of which I was previously unaware.

NOTE: IF YOU WERE REFERRED TO A NON-PODIATRIC PHYSICIAN, PLEASE PLACE AN "X" IN THIS BOX ----> [ ]

[ ] Only moderately satisfied. My condition got no worse but it did not materially improve.

[ ] Dissatisfied. You did nothing to help me improve.

B. From a financial standpoint, I was:

[ ] Very satisfied. I saved money by coming here.

[ ] Only moderately satisfied. Including transportation, I didn't save as much as I thought I would.

[ ] Dissatisfied. It cost more than it was worth.

C. From the standpoint of convenience, I was:

[ ] Very satisfied. I saved a lot of travel time by coming here.

[ ] Only moderately satisfied. I could probably have done as well by going elsewhere.

[ ] Dissatisfied. I would definitely have done better going elsewhere.

D. From the standpoint of personal treatment, I was:

[ ] Very satisfied. I was treated very well.

[ ] Only moderately satisfied. Things could stand improvement.*

[ ] Dissatisfied. There's a lot around here that's wrong.*

* PLEASE TELL US WHERE YOU FEEL IMPROVEMENT IS NEEDED:

_____

_____

_____

BEST COPY AVAILABLE

2. HOW HAS YOUR TREATMENT AT THIS CENTER AFFECTED YOUR FEELINGS CONCERNING PODIATRIC MEDICINE? [PLEASE CHECK ONE BOX IN EACH OF SECTIONS A AND B.]

A. Before visiting this center:

[ ] I had no awareness of podiatric medicine as a special form of medical practice.

[ ] I was aware of podiatric medicine but had no feelings, positive or negative, concerning its benefits.

[ ] I was aware of podiatric medicine and favorably inclined, i.e., thought it could do some good.

[ ] I was aware of podiatric medicine and negatively inclined, i.e., failed to see its value.

B. After visiting this center, my impression of podiatric medicine has:

[ ] Improved considerably.

[ ] Improved slightly.

[ ] Remained unchanged.

[ ] Gone down.

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PART III. PATIENT INFORMATION (to be completed by clinic staff)

(Optional: If the clinic's patient record includes a form that contains this information, you may attach a copy instead of completing this Part.)

Date of birth: _____

Sex [ ] Male [ ] Female

Race [ ] White [ ] Black [ ] Hispanic
[ ] Native American [ ] Oriental [ ] Other

Clinical diagnoses (ICD-9-CM or equivalent)

Treatment received (PPT)

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APPENDIX C. SURVEY FORM FOR FACULTY AND CARRER ADVISORS (SF-3)

SURVEY OF CAREER ADVISORS AND OTHER FACULTY

1. As part of a Federally-funded outreach program, a podiatric clinical training center was recently established at _____. Were you aware of this new training center?

[ ] No ----> PLEASE SKIP TO QUESTION 3.
[ ] Yes
↓

How did you become aware of it? [PLEASE CHECK ALL OF THE FOLLOWING STATEMENTS THAT APPLY.]

[ ] Visited it myself.

[ ] Know of someone who received care there.

[ ] Word-of-mouth from someone other than a recipient of care.

[ ] Read about it in the newspapers.

[ ] Received direct mail information. ---> From whom?_____

_____

[ ] Heard about it on radio or TV. ----> Please describe channel and nature of announcement: _____

_____

[ ] Other (specify): _____

_____

2. How has your awareness of this new training center affected your feelings concerning podiatric medicine? [PLEASE CHECK ONE BOX IN EACH OF SECTIONS A AND B.]

A. Before becoming aware of this center:

[ ] I had no awareness of podiatric medicine as a special form of medical practice.

[ ] I was aware of podiatric medicine but had no feelings, positive or negative, concerning its benefits.

[ ] I was aware of podiatric medicine and favorably inclined.

[ ] I was aware of podiatric medicine and negatively inclined.

BEST COPY AVAILABLE

B. After becoming aware of this center, my impression of podiatric medicine has:

[ ] Improved considerably.

[ ] Improved slightly.

[ ] Remained unchanged.

[ ] Gone down.

3. In recent years, has the interest of the students with whom you interact changed in any way with respect to the choice of podiatric medicine as a professional career?

[ ] No change that I'm aware of.

[ ] Change in a positive direction — more are now interested.

[ ] Change in a negative direction — fewer are now interested.

If you've detected a change, please elaborate on the reasons: _____

_____

_____

BEST COPY AVAILABLE

APPENDIX D. SURVEY FORM FOR RECENT GRADUATES PRACTICING IN SHORTAGE AREAS (SF-4)

FORM SF-4

SURVEY OF RECENT GRADUATES

1. How, and at what age, did you first learn of podiatric medicine as a separate medical profession? _____

_____

2. Which, if any, of the following factors accounted for your initial interest in pursuing podiatric medicine as a career? [CHECK ALL THAT APPLY]

___ Friend or family member who is (or was) a podiatrist.
NAME OF PODIATRIST: _____

___ Friend or family member who was, at the time, studying podiatric medicine.
NAME OF PODIATRIST: _____

___ Professional seminar or career fair at which podiatric medicine was discussed.
LOCATION AND APPROXIMATE DATE: _____
SPONSOR: _____
DESCRIPTION: _____

___ School career advisor or other member of faculty.
SCHOOL OR UNIVERSITY: _____
NAME (OR TITLE) OF ADVISOR: _____

___ Public service announcement on radio or TV.
CHANNEL AND NATURE OF ANNOUNCEMENT: _____
_____

___ Direct mail (DESCRIBE): _____

___ Newspaper advertisement (NAME, YEAR): _____

___ Newspaper or magazine article (NAME, YEAR): _____

___ Podiatric medical care received, by either yourself or someone you know.
SETTING AT WHICH RECEIVED:* _____
_____

* Include name (if known), city, and state.

___ Other factors not mentioned above. (IDENTIFY AND ELABORATE)
_____
_____

3. When did you reach your decision to practice in your present location?

[ ] Before I began my podiatric medical education.

[ ] During the first two years of my podiatric medical education

[ ] During my third and fourth years.

[ ] During my residency training.

[ ] Other (specify) _____

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4. a. At what specific location or locations did you receive your clinical training?

Training Site (Program, City, State)	Period of Training From (month, year)	To (month, year)

b. Where did you do your residency?

Training Site (Program, City, State)	Period of Training From (month, year)	To (month, year)

5. Which, if any, of the following factors did you consider in selecting your present practice location?

___ Wanted to be close to family or friend(s)

___ Was attracted by the physical environment, climate or community setting

___ Was attracted by professional facilities

___ Was attracted by academic setting

___ Was attracted by income potential

___ Wanted to practice in an area in which there was a shortage of podiatrists

___ Other (specify): _____

_____

6. Was your decision to practice in your present location affected in any way by your experiences (or persons encountered) during clinical training?

[ ] No

[ ] Yes ----> In what way? _____

_____

_____

_____

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APPENDIX E. PERSONAL INTERVIEW GUIDE FOR CLINICAL TRAINEES (PI-1)

FORM PI-1

PERSONAL INTERVIEW OF CLINICAL TRAINEES

1. How, and at what age, did you first learn of podiatric medicine as a separate medical profession? _____

2. Which, if any, of the following factors accounted for your initial interest in pursuing podiatric medicine as a career? [CHECK ALL THAT APPLY]

___ Friend or family member who is (or was) a podiatrist.
NAME OF PODIATRIST: _____

___ Friend or family member who was, at the time, studying podiatric medicine.
NAME OF PODIATRIST: _____

___ Professional seminar or career fair at which podiatric medicine was discussed.
LOCATION AND APPROXIMATE DATE: _____

___ School career advisor or other member of faculty.
SCHOOL OR UNIVERSITY: _____
NAME (OR TITLE) OF ADVISOR: _____

___ Direct mail.
FROM WHOM? _____

___ Public service announcement on radio or TV.
CHANNEL AND NATURE OF ANNOUNCEMENT: _____

___ Magazine or newspaper article.
NAME AND YEAR: _____

___ Podiatric medical care received, by either yourself or someone you know.
SETTING AT WHICH RECEIVED:* _____

* Include name (if known), city, and state of clinic or affiliated institution. In particular, indicate if care was received at this or any other remote training site.

___ Other factors not mentioned above. (IDENTIFY AND ELABORATE)

3. Did you apply for admission to more than one college of podiatric medicine?

[ ] NO ——> PROCEED TO QUESTION 4.

[ ] YES ——> (a) To whom? _____

(b) Were you accepted by more than one? [ ] NO
[ ] YES
↓
By whom? _____

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4. Which, if any, of the following factors accounted for your decision to select this particular college of podiatric medicine? [CHECK ALL THAT APPLY]

___ Geopersonal: Wanted to be close to family or friend(s).

___ Geophysical: Was attracted by physical environment or climate, and felt "comfortable" in this cultural environment.

___ Professional/ Academic: Preference for faculty, educational resources, or clinical training opportunities.

___ Other (specify): _____

_____

Where did you live at the time? _____ City _____ County _____ State

5. Do you, at this time, know where you intend to practice?

[ ] YES ---> Where is that location?* _____

[ ] NO ---> What locations have you been considering?* _____

_____

* PIN DOWN LOCATION IN SUFFICIENT DETAIL TO DETERMINE WHETHER IT IS A DESIGNATED PODIATRIC SHORTAGE AREA.

IN EITHER CASE, ASK:

— Which, if any, of the following factors did you consider (or are you likely to consider) in making your decision? [CHECK ALL THAT APPLY]

___ Geopersonal: Want to be close to family or friend(s).

___ Geophysical: Am attracted by the physical environment or climate, and feel comfortable in that location.

___ Professional: Am attracted by the professional facilities and continuing educational opportunities at that location.

___ Financial: Am attracted by the income potential.

___ Altruistic: Want to be of service in an area of need (shortage)

___ Other (specify): _____

_____

— Was your decision (or your decision process) affected in any way by your experiences at this particular (or any other) remote training site?

[ ] NO
[ ] YES ---> In what way? _____

_____

6. How do you believe your clinical experience differs from that of your fellow students not in "remote sites"? _____

_____

_____

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APPENDIX F. PERSONAL INTERVIEW GUIDE FOR CLINICAL SUPERVISORS (PI-2)

FORM PI-2

PERSONAL INTERVIEW OF CLINICAL SUPERVISORS

WHICH, IF ANY, OF THE FOLLOWING FACTORS DID YOU CONSIDER (OR DO YOU CONSIDER IMPORTANT) IN REACHING A DECISION TO SERVE AT THIS PARTICULAR SITE?

	LEVEL OF IMPORTANCE*		
	OF CRITICAL IMPORTANCE ("Would not serve here otherwise")	IMPORTANT BUT NOT CRITICAL	NOT IMPORTANT AT ALL
Desire to be near family and friends.	____	____	____
Preference for physical environment and/or climate.	____	____	____
Preference for local culture, affinity for local population, etc.	____	____	____
Preference for professional facilities, resources, and colleagues.	____	____	____
Preference for linkage with podiatric educational network.	____	____	____
Desire to serve underserved population.	____	____	____
Other (specify): _____	____	____	____

* Putting it another way, if you were offered another clinical position identical in all respects but the one indicated, would you be equally willing to accept that position?

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